



Island Marine Aquatic Working Group
7973 Chemainus Road
Chemainus BC, V0R 1K5

October 18, 18

Victoria Postlethwaite
Pelagics Management Unit
Fisheries and Oceans Canada
200-401 Burrard Street
Vancouver, BC, V6C 3S4
via: Victoria.postlethwaite@dfo-mpo.gc.ca

sent via e-mail

RE: 2017/2018 DRAFT PACIFIC HERRING INTEGRATED FISHERIES MANAGEMENT PLAN (IFMP)

Dear Ms. Postlethwaite

The Island Marine Aquatic Working Group (IMAWG) has reviewed the 2018/2019 DRAFT Pacific Herring Food and Bait and Special Use Fishing Plans effective **November 7, 2018**. Please see below for comments/concerns regarding the plans.

IMAWG and the participants would like to remind Fisheries and Oceans Canada (DFO) that First Nations have priority access, after conservation, as per Section 35.1 of the Constitution Act, with the obligation of the Department to engage in direct bilateral consultation with First Nation governments. Under no circumstance is IMAWG to replace direct fiduciary bilateral DFO to band consultations.

FOOD AND BAIT 4,000 SHORT TONS IN THE STRAIT OF GEORGIA

The impact of herring fisheries on the ecosystem as a whole has been a major concern of the Island Nations, particularly the food and bait fishery in the southern Strait of Georgia (including eastern SoG Statistical Area 29) due to the large increases in Total Allowable Catch (TAC) with little consideration given to both the idea of resident stocks and other species that depend on herring.

As indicated in the DRAFT Food and Bait Plan, the initial quota for the fishery is 4,000 short tons in the Strait of Georgia (SoG). While a catch cap of 1,000 short tons was implemented in the area south of Dodd Narrows, during the 2017/2018 herring Food and Bait fishery, a total of 3,983 (of the allocated 4,000) short tons were harvested in Subarea 29-5. **Almost 100 percent of the total allowable catch (for SoG) was removed from an area that is less than 60 square nautical miles.** IMAWG would like to understand how removing that much biomass from such a small area is sustainable.

As mentioned previously, based on local observations and TEK, smaller scale observations and beliefs indicate that there are sub-populations of pacific herring in the SoG that return to the same areas to spawn year after year.

Additionally, we would like to point out that although the current spawning biomass in the SoG is estimated to be at a historic high, there has been uncertainty in recent years, with the survey index in 2017 and 2018 showing a decline from previous years. According to the pre-approved 2018 Herring Science Response, there is also uncertainty associated with the spawning biomass forecast for 2019, and maintaining a high probability of exceeding the Limit Reference Point, does not mean that the SoG is immune to stock decline.

This is concerning given that it appears that commercial fisheries in the SoG are going to continue in the same way as last year, despite potential uncertainties in the forecasting. What makes this especially concerning is that some of the stocks which are now in low biomass, low productivity states (e.g. Haida Gwaii) were entered rapidly and **were proceeded by HIGH biomass states**. What's even more concerning is the fact that these stocks still haven't recovered despite a moratorium on fishing in the area. If this has occurred in other areas, what would prevent it from occurring in the SoG?

IMAWG would like to point out that the recent management actions have been taken to protect Southern Resident Killer whales (SRKW). In particular, actions to reduce the exploitation of Chinook salmon in identified SRKW critical habitat areas in an effort to increase the amount of prey available to SRKW. A portion of this identified critical habitat is located in PFMA subarea's which are immediately adjacent to area 29-5 (i.e., 18-1, 18-11, 18-2, etc. See Figure 1 below). These subareas are where SRKW are feeding and foraging on Chinook, which are likely feeding on pacific herring in the surrounding areas. According to Avid Angler data, Cowichan, Chilliwack and Harrison Chinook rear in these areas year around and feed on herring. So how is it, that the Government can take action in an attempt to increase the amount of prey available for Southern Resident Killer whale, but not make any effort to reduce the exploitation of their prey's prey (i.e. reduce the exploitation of herring, which Southern BC Chinook feed on). If the Federal Government is committed to making efforts to protect SRKW, it must take an Ecosystem Based Management approach in doing so.

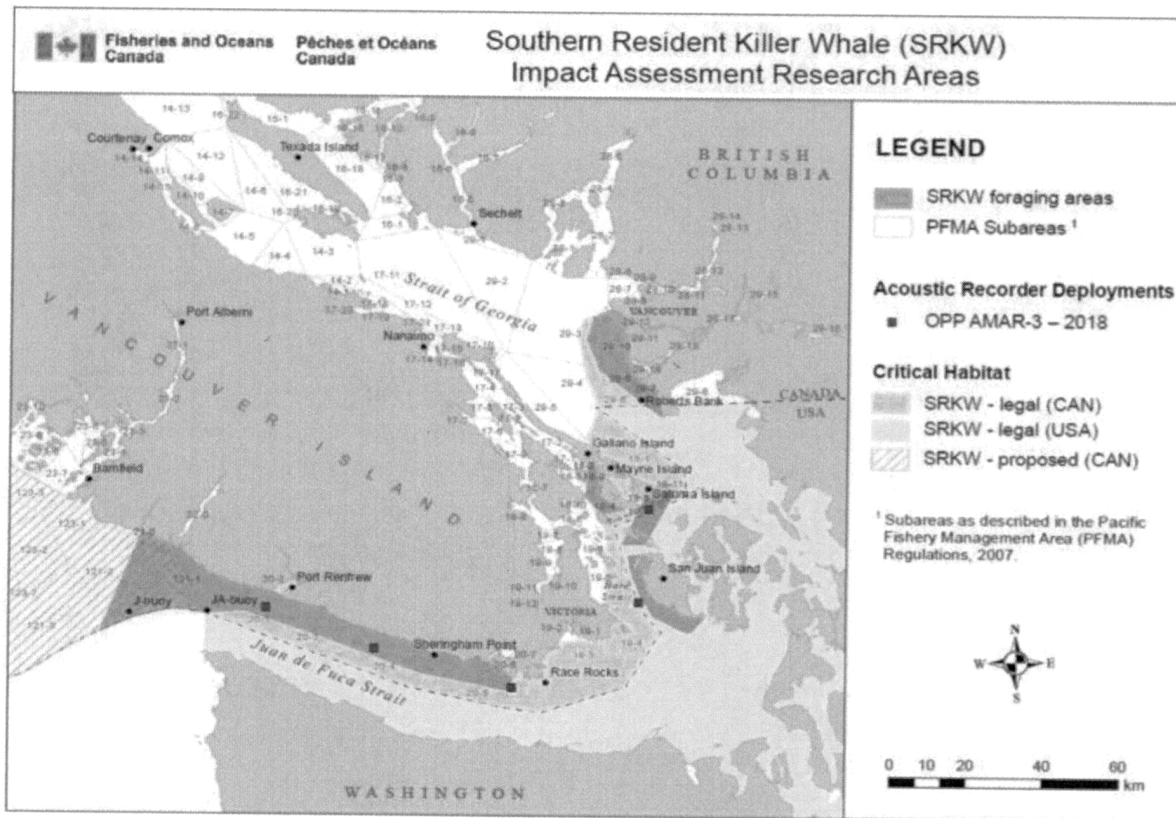


Figure 1. Identified Critical Habitat for Southern Resident Killer Whale (SRKW). Source: DFO Proposed 2018 Salmon Fishery Management Measures to Support Chinook Salmon Prey Availability for Southern Resident Killer Whales. February 23, 2018.

s.19(1) Please provide a written response, within 30 days of the date on this letter.

Sincerely,

Nick Chowdhury, IMAWG President

Cc: Laura Brown, Area Director South Coast, DFO
 Gerry Kelly, Aboriginal Affairs Advisor, South Coast, DFO
 Brenda Spence, A/Resource Management Pelagics, DFO
 Andrea Goruk, West Coast Vancouver Island Area, South Coast Resource Management Coordinator, DFO
 Vancouver Island Indigenous Government



**Island Marine Aquatic
Working Group (IMAWG)**



Fisheries and Oceans
Canada
Pêches et Océans
Canada

**HERRING AGENDA
VANCOUVER ISLAND NATIONS AND FISHERIES AND OCEANS CANADA
TIER TWO**

DATE: October 25, 2018

LOCATION: Coast Hotel, Nanaimo BC

CHAIR: Nick Chowdhury

OBJECTIVES:

- Discuss the DRAFT Traditional Ecological Knowledge submission on the value of the herring fishery to indigenous peoples for the Integrated Fisheries Harvest Plan.
- DFO to provide a 2019 management update for herring.
- Finalize next steps and priorities with DFO based on the established action table.

DAY TWO: TIER TWO

8:30 AM	<i>Coffee and Refreshments</i>
9:00 AM	Welcome Prayer – Host Nation Elder Agenda and Objectives - Chair Meeting Guidelines - Chair Introductions - Chair
9:15 AM	Summary of Tier One – Nick Chowdhury
9:30 AM	Value of Herring in Indigenous Fisheries <ul style="list-style-type: none">• Review of Draft Document – Sonora Thompson, IMAWG• Edits and Suggestions by DFO – Gerry Kelly, DFO• Roundtable Discussion
10:30 AM	Break
10:45 AM	Pacific Herring Renewal/Management Strategy Evaluation – Andrea Goruk, DFO <ul style="list-style-type: none">• Update on Process• Consultations to Date• Next Steps
12:00 PM	<i>(Lunch Served)</i>
1:00 PM	Herring Fisheries Management Update – Amber Neuman, DFO <ul style="list-style-type: none">• 2018/2019 Integrated Fisheries Management Planning and Timelines• Health Canada Risk Assessment - Vibrio Cholera• Fishery Monitoring Risk Assessment - Process Update
2:30 PM	Break
2:45 PM	Herring Fisheries Management Update <ul style="list-style-type: none">• Continued Discussions
3:30 PM	Review of Content Discussed and Preparation for Tier Two (ACTION TABLE) <ul style="list-style-type: none">• Roundtable led by Nicole Frederickson and Sonora Thompson
4:00 PM	End of Meeting

IMAWG Executive Director Sonora Thompson
email: smorin.imawg@gmail.com cell: 250-202-0037

14111006 / DFO Ther 2 Herring
Coast Bering, Norway.

Oct 30/16

Chair - Carl Edger

Mick C - Summary of Ther 1 :-

Importance of Herring:

McIsaac :- little or no scientific methods - how are we going to fix these problems.
- need more studies to get where we need to go.

Mick C :- do need to understand where we are - so we can get to be where we need to be.

Kea Beaulieu :-

- how much will go through? -

Naren J :- Spiritual connection:

June: this is important. → Herring is important.

Mick - Herring is always this now.

Carry Belpert - Fish focus on the issue of herring abundance.

- DFO has needed their best of our country.

- do our study on the Herring

- DFO is now in our in the fish focus.

Ther, Mick

- Uncoordinated is important - it is part of the educational piece

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Long Sean:

- Ar. 100, 101, 102 - per to put 100,000 already forward -
subject to RTR + RTR approvals. -
- Sean as if makes time any edits
- Ar. 100 as much as you get that they will have a chance
to comment during the 1000 consultation period

UC + others - Floyd Campbell - wanted chart what kind of word "justified"
very plain or people:

→ draft scheduled to release Nov 22/16.

M&E Presentation - Arden & Amber:

Slide - 9 - question slide.

UC 189000 = wanted done Nazis over.

- Study on request. - how ready for RTR. - Ar. 12 / think
he is being done.

Arden: - ~~say~~ submit proposal. Keep RTR to
Richard Seeger.

- we have a list of studies from
various RTRs

- we do have some work done.

Arden Amber: Ar. 12 is outside of RTR's scope.

- impact - but - probably the direct impact study - series
will put on RTR's scope over RTR.

Floyd Campbell - question about submitting to RTR?

- wanted chart description of feedback from

Interim RFO (Herij Teri 2

Oct 30/198

- UHA? = doing well press - news.

Andre: HPCQ midj - ^{flashed} a couple of yrs ago?
- hard to put down

- the process is meant to keep for all stakeholders.
- should not be just imposed.
- Andre would like to follow up in Breda is to make sense

- Andre: HPCB - they must into Key vert.

Norman: we are trying to rebuild; but industry wants to have opportunity.

- STC - rebuild + share - but we have to look at our inputs and the products.
- When the draft is known about a stock - and for EO - how does it work.
- It is why we need a land merge plan.

Norman: when will RFO start doing generic review?

Andre: 1) IMPT production - judge - has suggested that we write the position to give the production to RFO as well.

2) Space Dist. Maps - for our more fields - what we generate - does some space by area.

- differences in our - maybe we can merge production to our 7 space in the area?

Andre: - feedback - how is it set up to avoid further ones.

- we may need to look at a different model.

→ Jerome = ^{new} height model towards objectives.

→ reliability + sustainability

Answer: we don't have specific options for other groups -
no specifics.

- the system based / design is needed - the work,
learning, objectives - may come later

Answer: we are interested in both of what a new policy
objectives would be.

Mark: ? :-: not sure what he is telling about
- 50% probability?

- will - agreed? - thought it has been
done for the past few years? - report / or
mis-imposed?

- fore pay - city questions - at some meeting?

Answer: - it's not a decision with the Asset model
to use.

model est. about 5 years.

the new overestimate

- industry was operating based on that (?)

model.

- still don't know the policy - it's not it.

→ * no model will ever be perfect.

Mark: if we can't get our house in order we don't
have a policy.

Insert OFO Henry Tai 2

Oct 30/18

Rich: ① What are objectives of Pacific King Heron?

- avoid "us" vs. "you" warlike - full of King Heron.

② My early processes - 8:

③ Where do we find bird and place to see up over horizon & far?

- smaller and consistent

- a "we" warlike to understand where are objectives are depicted?

Answer: (Emp & Fishing Plans:

Think: 29-5 sampling; includes comm. view that 29-5 shows are migratory and not resident

- genetic sample should still be taken.

Notes: - even though ↑ SFB means - can create very quickly

- should not be fishing in just high concentration.

- spread out comm. fishing camp - 5 or more - then for you [Mike - it would help analyzing per sample]

↳

Answer: - best for SFB - not likely - not quality.

- argue to possible for BFB -

- personal agents -

- doesn't see it as big possible for SFB fishing.

Notes: [- let him down the concept of the quality &

do we have the luxury to max - or will

market have to change to decline sustainability?]

Notes: - being "home" - like salmon.


- want science - is too cheap - it will get worse.

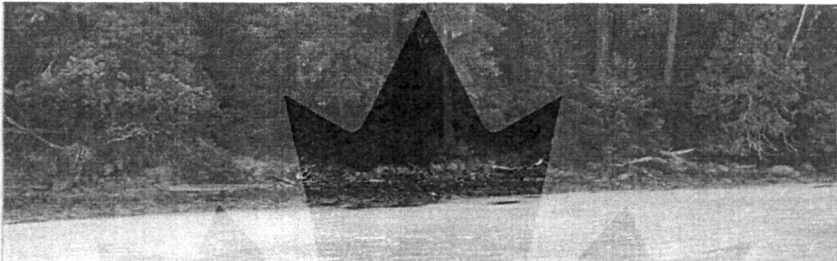
Nick: - we are managing to a large of ~~unknown~~ unknowns.
- I would say: how do we manage to uncertainty?

→ [Push] → what are we doing in it?

Web:-


Mauri Campbell - is the contact to
pick up with
- ahoufc@gmail.com:-

 Fisheries and Oceans Canada / Pêches et Océans Canada



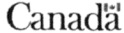
DFO Pacific Herring Update

Prepared for IMAWG
October 30, 2018
Andrea Goruk & Amber Neuman (DFO Resource Management)



Herring Spawn, Lower Baynes Sound, 2018, Photo Credit: Amber Neuman

Content modified from material originally prepared and presented by A.R. Kronlund (DFO), Jaclyn Cleary (DFO), Ashleen Benson (Landmark Fisheries) & Brenda Spence (DFO)



Overview

1. Update on Pacific Herring Renewal and Management Strategy Evaluation
 - Update on Initiatives
 - Update on Process
 - Consultations
 - Next Steps
2. Update on DFO 2018/2019 Herring Fisheries Management
 - Review of 2018/19 planning timeline
 - Review the preliminary results of the 2018/19 stock assessment and forecast and plan for 2019 stock assessment
 - Health Canada Risk Assessment
 - Fishery Monitoring Risk Assessment

Update on Pacific Herring Renewal and Management Strategy Evaluation

Element 1: Management Strategy Evaluation (MSE)

Process

Update July 2018 CSAS simulation results

Next phase of MSE - update

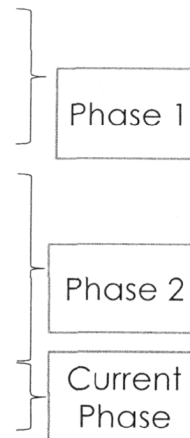
Element 2: Fisheries Management Reforms

Element 3: Stock Assessment Program

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Key Steps in the MSE Process

1. Define decision context
2. Define management objectives and performance indicators (including LRPs, USRs) *Upper Stock Mgt Point*
3. Identify set of Management Procedures (MPs)
4. Define set of Operating Models *(diff. from Assessment models)*
5. Simulate MP performance
6. Rank overall MP performance
7. Apply MP to the real fishery



(Source: MSE Roadmap Paper – Landmark Fisheries Research)

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Pacific Herring Renewal Element #1 Management Strategy Evaluation

What was done for the July 2018 CSAS MSE analysis?

Discussion of objectives between Science, FM, First Nations, and Industry:

- **Conservation objective** related to Limit Reference Point (LRP)
- **Biomass objectives** related to Upper Stock or Target Reference Points (USR, TRP)
- **Yield objectives** related to stable catch and maximum average catch

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Pacific Herring Renewal Element #1 Management Strategy Evaluation

MSE Cycle 1 (2018):

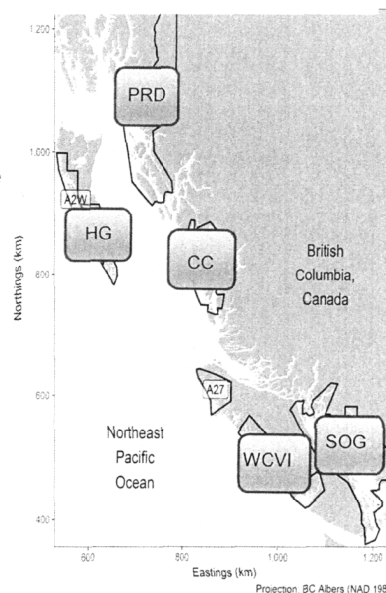
- Simulation results for WCVI and SOG.

MSE Cycle 2 (2019):

- Simulations for other major stock areas.
- Science engagement to develop/refine objectives for SOG/WCVI.
- Work on prioritization of measurable objectives - Review MPs.
- Resource Management engagement on non-measurable objectives.
- Explore new MPs

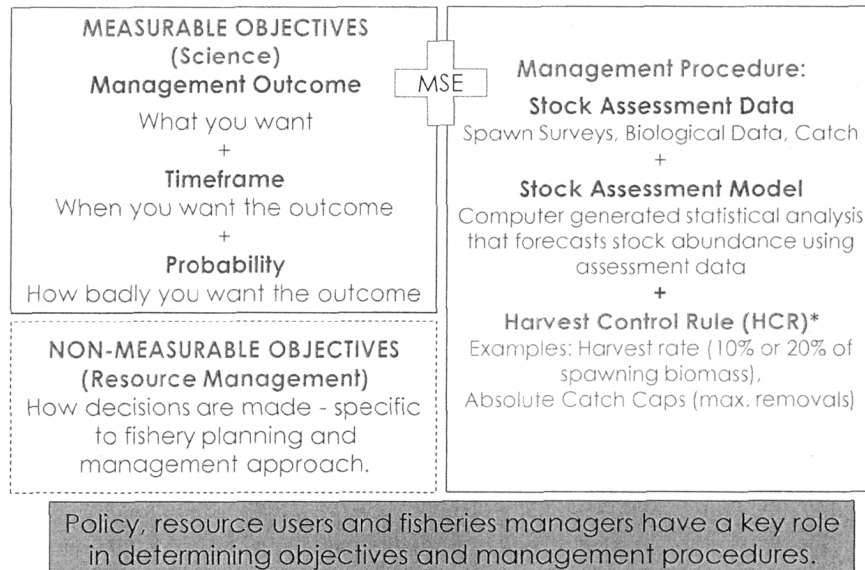
Future Work:

- Explore spatial and temporal dynamics.
- Regular schedule for simulation evaluation.
- Review, refine objectives and MPs.



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Consultation & Engagement - Objectives



*HCR – The only portion of the Management Procedure that is varied in the first MSE cycle.

2018/19 SCA Planned Engagements on MSE Subject to adjustment as required

Date	Key Item
Sep 25	Areas 14 and 17N First Nations MSE Meeting (A-Tlegay, K'ómoks FN, Qualicum FN)
Oct 16	IMAT Herring Technical Meeting
Nov 2	NCN (WCVI) - MSE Operational Objectives Meeting
Nov 8	Tla'amin First Nation Fishery Planning and MSE Meeting
Jan	QARS - South of Dodd Narrows MSE Workshop (SOG) - Tentative
TBD	Industry MSE Objectives Meeting

Oct 30/18
IMAT Herring
Tier 2

NCN?
Nanaimo-mulh.

Fisheries Management Update

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IFMP and Commercial Fishing Plans Considerations by Stock Assessment Area

Objective: to outline the context and key decisions required for the upcoming 2018/19 Pacific Herring season, including:

1. Flag key decisions
2. Build an understanding of considerations for each stock area
3. Identify further information needed for decision making on harvest approach
4. Discuss key points and status relative to planning timeline

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Draft 2018/19 Timeline Subject to adjustment as required

Date	Key Item
Sep 26	Draft Food & Bait, Special Use Commercial Plans Released for 30 day consultation.
Oct 24	Food & Bait licence application
Oct 25	Q'u'lhanumutsun Aquatic Resources Society Fishery Planning Meeting
Oct 25	Consultation Period for Food & Bait/Special Use plans ends
Oct 30	IMAWG Tier II meeting
Nov 5	Food & Bait and Special Use Commercial Fishing Plans approved, licence issuance
Nov 7	Food & Bait and Special Use fisheries open
Nov 8	Tla'amin First Nation Fishery Planning and MSE Meeting
Nov 14	Ministerial decision on 2018/19 management approach
Nov 20	IHHPC Conference call
Nov 22	DRAFT 2018/19 IFMP available and released for 30-day consultation period
Nov 28	Maa-Nulth Nation 2018/19 IFMP and planning meeting
Dec	Roe selection into F&B for SOG, if required
Dec 21	DRAFT IFMP consultation period ends
Early Jan	Roe licensing process and Roe selection into Food & Bait commences
Jan 22	Pacific Herring 2018/19 IFMP approved
Feb 11	Roe license issuance completed

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2018/19 Science Advice

- CSAP Meeting – July
 - Peer review of MSE working paper
- Science Response – October
 - 2018 Stock Assessment and 2019 Forecast
- For ALL AREAS:
 - Updated biomass estimates and production analysis provided.
 - Spatial spawn distribution provided.
 - Fixed cutoff values not provided:
 - Calculated outside of the current assessment model, not updated since 1996, and substantial changes to the assessment model

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Area Specific Harvest Advice



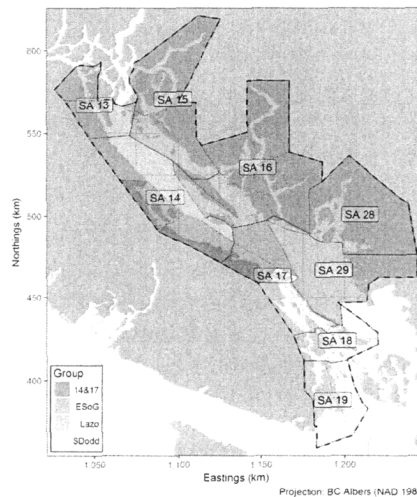
- **HG, PRD, CC:** no area-specific simulation-evaluation analyses.
- Harvest advice for these areas is provided in the form of **decision tables** (same as last year)



- **SoG, WCVI:** Harvest advice applies the results of the MSE simulation-evaluation completed July 2018.

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Boundaries for the Strait of Georgia Major Stock Assessment Region

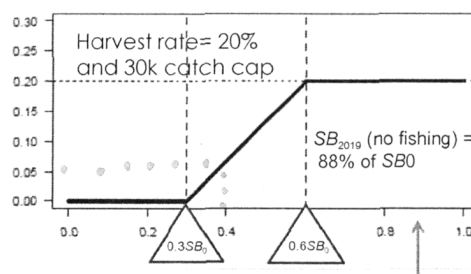


*SA 14, and 19
combined.*

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SOG Science Advice 2018/19

- Current spawning biomass estimated to be at a historic high level, although large uncertainty in recent years.
- Harvest recommendations for SOG using a management procedure (MP) with:
 1. operational control points related to SB_0 (0.3, 0.6 as demo only)
 2. 20% target harvest rate
 3. Catch cap of 30,000t to mitigate against assessment errors
- A range of other MPs met the conservation objective and could be considered following objective ranking.
- **SR 2019 catch calculation for 20% HR is: 25,791t (28,430 short tons)**



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*if
Std is 0.4 of
Spawning Biomass
= Mass
2.05
Harvest Rate.*

SOG First Nations Considerations

- First Nations Traditional Knowledge (TK) and DFO Resource Management and Science records:
 - Areas 15, 17S and 18 were known to have spawn and FSC harvests in the past – decline and absence of observed spawn in these areas.
 - Spawn and FSC harvests typically do not occur in 29-5.
 - Herring are important socio-culturally and also have important ecosystem function.
- First Nations in southern SOG believe resident stocks of herring mix with migrating stocks in these areas during the timing of the Food and Bait fishery and this has resulted in over-harvest of these resident stocks.
- Requesting full closure to herring in 15, 17S, 18 and 29-5.

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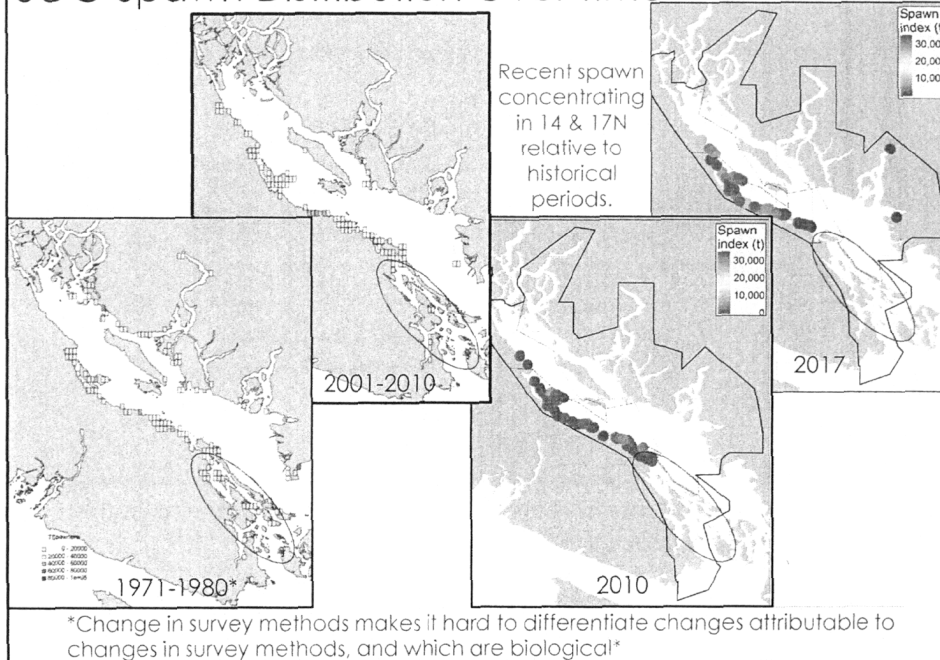
SOG DFO Science and Resource Management Considerations

- Spawn has concentrated in Areas 14 and 17N over the last 2 decades (>99% in 2018). - we didn't know why spawn is concentrating.
- It is unknown what drives changes in migratory patterns and spawn timing/ spawn distribution.
- Spawn declines/absence in southern SOG occurred prior to increases in F&B fishery.
- Herring caught in F&B fishery have similar weight-age to the test fishery samples, and we don't see smaller/ younger herring being targeted by the F&B fishery - suggests the F&B fishery intercepts migratory herring stocks as they migrate to spawn in late February.
 - It is unknown if migratory stock mixes with potential resident stocks during the F&B fishery.

-we didn't know if migratory stocks mix in resident stocks - fresh water out of U of Wash.

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SOG Spawn Distribution Over Time



- Concern for
F&B fishery is
impacting
spawning

SOG Food & Bait Fishery Catch (Short Tons)

Fishing Year	SOG F&B Quota	SOG F&B Total Catch	Catch from 17S	Catch from 29-5
2017/2018	6,954	6,005	0 (cap 1,000)	3,983 (cap 4,000)
2016/2017	7,483	7,383	91 (cap 2,000)	4,298
2015/2016	7,768	7,639	42	3,903
2014/2015	9,085	7,932	497	0
2013/2014	8,000	8,000	3,612	0
2012/2013	4,445	4,401	32	0
2011/2012	6,000	3,951	2,405	0
2010/2011	300	283	283	0
2009/2010	300	220	168	0

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Commercial Industry Considerations

- DFO has received several letters from the commercial industry, Fish Safe, and BC Seafood Alliance citing impacts of proposed closures on fishery, especially in subarea 29-5:
 - Area provides close proximity to processing plants in Vancouver.
 - Fewer sea lions relative to northern SOG areas – increases fishermen safety and impacts to sea lions/gear.
 - Abundance of fish in 29-5 during inshore migration periods – overall SOG biomass is high.
 - Close proximity to protected anchorage and safe fishing location.
 - Further restrictions to areas where fishery occurs makes the fishery less economically viable.

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What is DFO doing to address concerns in SOG?

- 2016/2017: F&B catch cap of ^{first time} 2,000 short tons in Areas 17S and 18, and a spawn trigger for roe herring fisheries in 15, 17S and 18 (spawn length and duration).
- 2017/2018: F&B catch cap of 1,000 short tons in Areas 17S and 18 and 4,000 short tons in 29-5, and roe herring fisheries closed in 15, 17S, 18.
- 2018: Implementation of Management Strategy Evaluation (MSE) results in decision making.
 - First Nations input on objectives is needed to help guide MSE process.
 - Future work identified for MSE includes looking at spatial dynamics. In 2018 spawn distribution by area was presented in Science Response on herring stocks.
 - DFO Science exploring new sampling project with Stz'uminus looking at year-round presence of herring to provide information on spatial/temporal dynamics.

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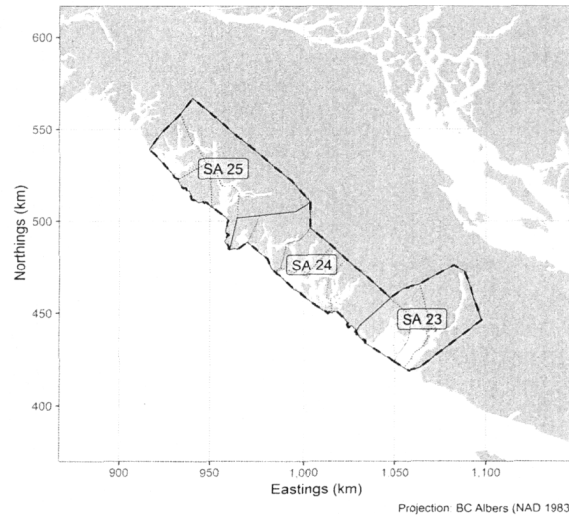
Strait of Georgia (Areas 13 to 18, 29)

Questions:

- What should be considered when thinking about harvest planning in this area?
- How should the MSE results be considered for harvest planning?
- What recommendations would you make for harvest planning, and why?

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Boundaries for the West Coast of Vancouver Island (WCVI) Major Stock Assessment Region



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WCVI Science Advice 2018/2019

- Spawning biomass estimated to be above the LRP.
- Survey data and model estimates of spawning biomass show increasing trajectory, however, it is gradual and erratic.
- Simulations showed no MP meets the conservation objective with a high probability under all 3 natural mortality scenarios.
- NCN objectives could not be met even under "no fishing" scenario.
- Best performing MP meets conservation objective with 74% probability (high probability = 75%-95%).
- Next cycle of MSE – Look at other management procedures (e.g. "slow-up" MP).

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West Coast Vancouver Island

Questions:

- What should be considered when thinking about harvest planning in this area?
- How should LRP be considered for harvest planning? (e.g. is avoiding LRP with 75% probability high enough?)
- What recommendations would you make for harvest planning, and why?

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IFMP Development

- Food & Bait and Special Use commercial plans:
 - F&B interim proposed quota of 6,000 short tons in SOG.
 - First Nations have requested commercial closures in southern SOG.
 - Consultation period closed October 26.
 - RDG approval of plans and decision for southern SOG pending.
- Updates and changes to IFMP:
 - Science update
 - Draft Risk Assessment results
 - First Nations information
 - Economic section
- Consolidated IFMP (including Roe and SOK plans) released for consultation Nov 22 (tentative)
- Consultations through Area Staff – South coast Area:
 - Andrea Goruk – Resource Management Coordinator
 - Amber Neuman – Resource Manager SOG
 - Amy Ganton – Resource Manager WCVI
- Comments tracked through RHQ - Victoria Postlethwaite with support from Area Staff (as last year).

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In-Season Updates

- Fishery Notices
 - OpsCentre: dfo.opscentrefisherypacific-centreopspechepacifique.mpo@canada.ca
 - On-grounds commercial fishery updates: soundings, catch and roe test code
 - First Nations Herring Communications Coordinator

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Expected Use Table

DRAFT

2018 / 2019 EXPECTED HERRING USE BY FISHERY AND AREA
Values In Short Tons (T)

AREA	Harvest Option	FSC	SOK		ROE-HERRING		WINTER FOOD & BAIT (ZM)	SPECIAL USE					TOTAL
			ABORIG COMM L	J-LICENCE	SEINE	GILLNET		PERS'L USE BAIT (ZX)	SPORT BAIT (ZY1)	COMML BAIT (ZY2)	HUMAN FOOD (ZY3)	ZOO & AQUAR (ZY4)	
Area 2W													0
HG	0	150											150
PRD		600											600
Area 10													0
CC		600											600
Area 12													0
SOG	28,430	35			21,493		6,000	25	617		150	110	28,430
Area 27													0
WCVI		150											150
TOTAL	28,430	1,535	0	0			6,000	25	617	0	150	110	29,930

Areas shaded in grey are minor or outside stock assessment areas

1.10231131 short tons = 1 metric tonne

Vibrio cholerae



- Pacific Fishery Management Areas 14-1, 14-4, and 14-5 closed to fishing for herring eggs by handpicking March 23, 2018.
- Closure based on advice received from Vancouver Island Health Authority regarding concern for human health with multiple reports of diarrheal illness associated with herring egg consumption from product harvested on substrate in the area.
- Risk Assessment is being undertaken by Health Canada. Results of RA will be shared. Closure still in place.

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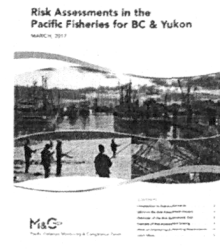
Pacific Fishery Monitoring Risk Assessments

- Pacific Strategic Framework for Fishery Monitoring and Catch Reporting in the Pacific Fisheries (2012) requires that all fisheries in BC and Yukon undergo risk assessments to identify appropriate monitoring.
- Committed to 2018/19 for 'Round 1' Fisheries (includes commercial herring fisheries)
- Each assessment identifies the estimated level of risk that a specific fishery poses to the:
 - Main species/stocks targeted by a fishery
 - Species taken as by-catch
 - Ecological communities
- Draft risk assessment findings support current level of monitoring.

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Pacific Fishery Risk Assessments: Next Steps

- Comments/changes from commercial harvesters incorporated.
- Include in IFMP for broader consultation
- 'Final' draft in 2018/19 IFMP for comment
- FSC fisheries Risk Assessments planning underway.
- Implementation of National Policy.



31

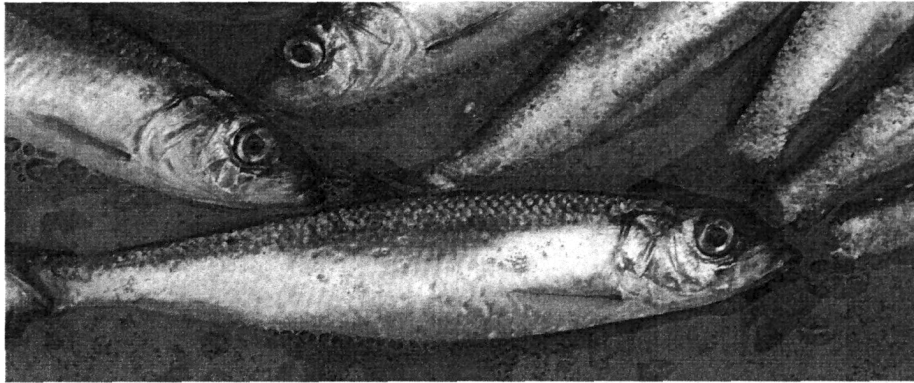
National Fishery Monitoring Policy

- Consultation open Oct 11, 2018 to Jan 25, 2019.
- Within the suite of policies that make up the National Sustainable Fisheries Framework
- Scope: Applies to all commercial, recreational and Indigenous wild capture fishing activities in Canadian fisheries waters.
- Based on Pacific Region model.
- New tools being developed to address some of the concerns raised with Pacific Assessments.
 - Risk Assessment Tool - quantitative approach to compliance and ecological risks – less subjective than current tool.
 - Dependability tool - looks at quality and accuracy of data that is collected.
- Continue work with regional risk assessments until national policy and associated tools in place
- DFO Contacts: Marc Clemens (NHQ) and Jonathan Thar (SFF, FM – Pacific)

<http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/comm/consultation-nat-fsh-eng.htm>

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Discussion

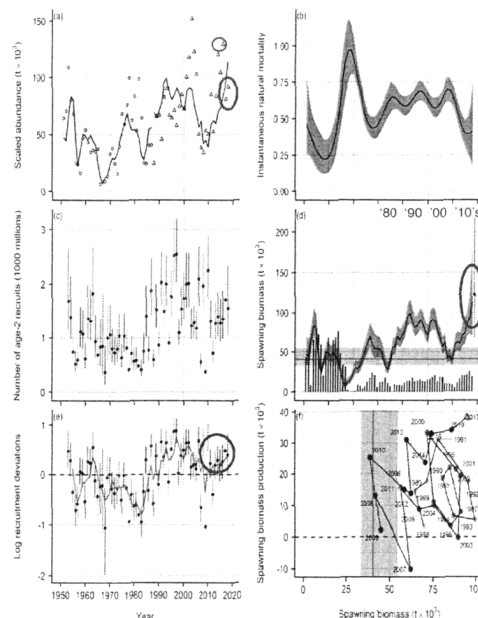


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Extra Slides

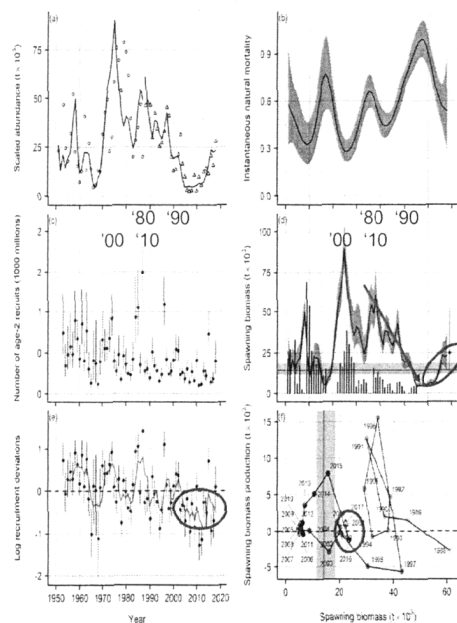
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SOG - Pacific Herring Science Overview 2018



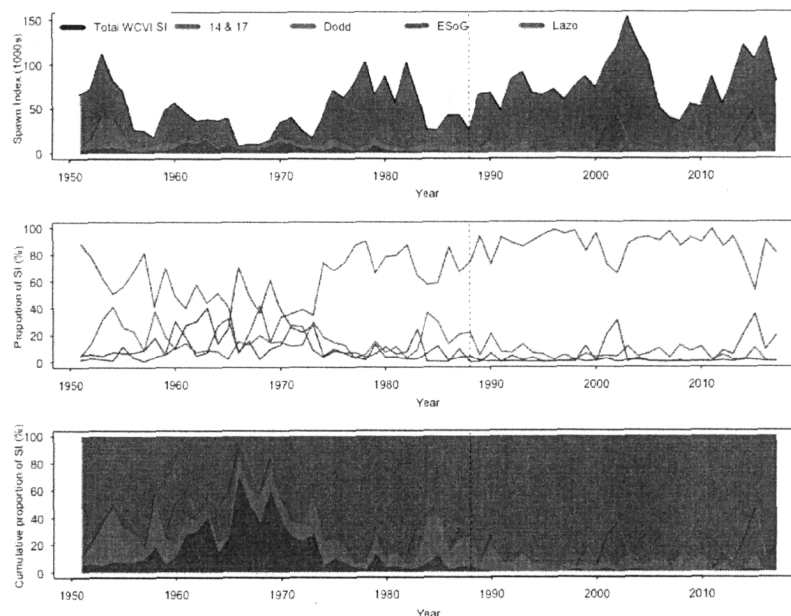
- Current spawning biomass estimated to be at a historic high level, although large uncertainty in recent years.
- Survey index in 2017 and 2018 shows a decline from 2016 however this decline is not picked up by the model b/c the model fits an averaged trajectory through the spawn index values of the 2010s.
 - i.e., there is insufficient information to determine if the decline from 2016 to 2018 represents a decline in spawning biomass.
- The model estimates above average recruitment in most years from 2010-2018 with recruitment deviations showing larger recruitment of age-2 fish than expected from the stock-recruitment function.
- The increasing trend in estimated spawning biomass since about 2010 coincides with a decline in estimated natural mortality that began in the late 2000s.
- Estimated spawning biomass in 2018 is 113,425 t (SB2018, median) or 82.3% of SB0.
- SB2018 is greater than the LRP of 0.3SB0 with a 99.6% probability.

WCVI - Pacific Herring Science Overview 2018



- Closed-loop simulations for WCVI evaluated alternative management procedures (MPs) that differed only in the configuration of the harvest control rule (HCR) and application of a catch cap;
- Results showed that no tested HCR could meet the conservation objective of maintaining spawning biomass above the LRP with high probability (at least 75%) across the three future natural mortality (M) scenarios.
- WCVI survey data and model estimates of spawning biomass show the increasing trajectory for WCVI herring as both gradual and erratic.
- The 2018 assessment estimates WCVI spawning biomass to be above the LRP in 2015-2018, however this perspective based on stock assessment model estimates does not take into consideration positive assessment model errors (of which there is evidence from the simulations).

Spawn Index by Area



Roe/F&B Risk Assessment: Key Findings (draft)

- Risk to main species – 4 (moderate)
- Risk to bycatch/community & habitat – 2 (low)
- Overall – 4 (moderate)
- ✓ Target monitoring level (roe seine/F&B) – enhanced (and current)
- ✓ Target monitoring level (roe GN) – generic (and current)



SOK Risk Assessment: Key Findings (draft)

- Risk to main species: 2 (low)
- Risk to bycatch: 2 (low – closed pond); 0 (open pond)
- Risk to community/habitat: 4 (moderate – closed pond); 2 (low – open pond)
- Overall: 4 (moderate – closed pond); 2 (low – open pond)
- ✓ Target monitoring level (closed pond): generic (and current)
- ✓ Target monitoring level (open pond): low (currently generic)



Kelly, Gerry

From: Neuman, Amber
Sent: 2018–December-20 3:40 PM
To: Spence, Brenda; Kelly, Gerry; Postlethwaite, Victoria; Rusch, Bryan; Thompson, Matthew; Cleary, Jaclyn
Subject: RE: Herring Action Planning Meeting - November 19th - Summary Notes
Attachments: 2018 Herring Action Planning Meeting Summary-ANcomments.docx

Hi folks,

I have gone through IMAWG's notes and while I have a few edits, most of my comments are updates based on internal follow-up meetings and review of scientific literature. All of my edits are in track changes and I have also put my comments in blue if you want to use "Final" on the review tab for ease of reading.

Please review and let me know if we should provide these comments in this format or if it would be more appropriate to reply in a separate letter. Either way, I would also send them copies of the referenced papers.

s.19(1)

Also note, that today [REDACTED] I will follow-up to any of your responses at that time.

Happy holidays everyone!

Cheers,

Amber Neuman

Tel: (250) 756-7246 | Cell: (250) 618-1022

From: Sonora Thompson [mailto:smorin.imawg@gmail.com]
Sent: 2018–November-23 1:52 PM
To: Spence, Brenda; Neuman, Amber; Kelly, Gerry; Postlethwaite, Victoria; 'Nicole Frederickson'; Rusch, Bryan; Thompson, Matthew; 'Nick Chowdhury'
Subject: Herring Action Planning Meeting - November 19th - Summary Notes

Attached; very rough but if there is something I completely missed, let me know.

I will prepare a summary letter to Laura next week.



Sonora F. Thompson

Executive Director, Island Marine Aquatic Working Group

7973 Chemainus Road, Chemainus BC, V0R 1K5

Mobile: 250-202-0037

www.imawg.ca

Herring Action Planning

November 19, 2018

Attendees: Gerry Kelly, Sonora Thompson, Amber Neuman, Nicole Frederickson and Brenda Spence

Spawn Timings

- Local community members have expressed interest in doing this work as they are out in the field already.
- Suggest that Indigenous communities map traditional harvest areas to track changes patterns over time.
- Creation/sharing in the communities of an observation format to track, report and creation of maps; provide data to Matt Thompson (DFO contact for all herring spawn). No formal format, but may need to be more specific for Matt. Matt and Resource Managers coordinate dive surveys and overflights.

DFO Update:

- The Herring Spawn Survey Manual can be found online (Appendix D – Surface Surveys starts on pg 54 of the pdf): <http://www.pac.dfo-mpo.gc.ca/science/species-especes/pelagic-pelagique/herring-hareng/hertags/pdf/SurveyManual.pdf>
- Conducting a complete and accurate surface survey is a very detailed process, while the manual provides clear instructions, additional training may be required.
- Reports of spawn should include at minimum:
 - o Date of spawn observe, Location of spawn, Length of spawn, Intensity of spawn, Name and contact information of person who observed spawn.
- Spawn reports or completed spawn survey data packages should be sent to:

Matthew Thompson
Pacific Biological Station, Fisheries & Oceans Canada
3190 Hammond Bay Rd, Nanaimo, BC V9T 6N7
250-756-7082
matthew.thompson@dfo-mpo.gc.ca

- ***ACTION:** communiqué, piece may be available (on collection Spawn Observations); Jaclyn to follow up with Nicole. Brenda Spence will send communiqué electronically.
- - o Question – This piece should be updated before being posted to social media, will IMAWG or DFO take the lead on this?
- Facebook traction; good outlet to communicate with members/First Nations to post communiqué.

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- QARs TrailMark database could help for incorporating spawn observations. *ACTION: would QARS be willing to share an example of the database. Nicole to follow up with Chad Ormond.
- DFO is looking for spawn observations and needs the public to contact them as quickly as possible. DFO thought of creating a Facebook page for people to take pictures and report to DFO. *ACTION: IMAWG to create a sub page on Facebook for the public to post spawn sightings.

Herring Genetic Data Collection/Lack of Herring and Spawn in Area 17S

- Indigenous communities on participation in the research; U of W to provide materials.
- DFO will incorporate research into science once published.
- Food and Bait in Area 29-5 is of a concern for the local Indigenous Communities; however U of W doesn't feel that the DNA collected in the Food and Bait fishery may not be finite to Area 29-5. Wouldn't it be good to still collect at this point? *ACTION: Nicole to follow up with U of W if there is any data we can be collecting now in hopes that any future work or studies can identify stock specifics. How pays for the analyzes? DFO doesn't have the genetic funding (100.00 per fish); getting the samples from Food and Bait isn't difficult.

DFO UPDATE – A genetic study was conducted in the early 2000's (Beacham et al. 2008) that assessed genetic population structure of Pacific herring in BC and adjacent regions. In BC four stocks were defined, however, there was limited genetic differentiation between herring populations, results of this study indicated that there are high rates of straying within and between populations. This supports previous findings from DFO herring tagging studies conducted in the late 1990's/early 2000's. In the Beacham et al. 2008 study, samples of summer resident fish were collected in the Strait of Georgia but rather than finding genetic differentiation, on the west side of the Strait it was determined that these "residents" were derived from the main spawning populations and failed to migrate to off-shore feeding grounds. While there likely are sub-populations that contribute to the larger aggregate stock, the differences seem to be behavioral and are not likely to be differentiated in a genetic study. Based on these findings, there is likely limited value in collecting samples for further genetic analysis. I suspect Elani will provide a similar response based on the genetic work that she has conducted but I'm interested to hear if she has any other suggestions or feedback.

- A year round sample collection could create a baseline; not sure how successful that would be but we could start. *ACTION: Jaclyn to look at creating a contact with QARS/Cowichan to collect data year round. Amber mentioned that there is internal dialogue in DFO on how this can happen. Sample collection variables are in the unknowns, but would like to get it going. Jaclyn wanted to work with Tim from Cowichan. If not working with

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Cowichan, talk with QARS with a cost estimate on the collection. Jaclyn is working with Matt on how much this could cost.

DFO UPDATE - We've discussed the options and feasibility of such a sampling program. There are already some DFO projects that collect data on herring presence in the summer months:

1. Juvenile Herring Survey - Purse seine survey conducted annually in August along known transects (2 transects South of Dodd - Trincomali and Yellow-point). Survey data includes presence of adults.
2. Salmon Survey - Trawl survey conducted twice annually from Cape Mudge to US border, including around the Gulf Islands - late June and September. Collect data on other species as well, including herring.
3. Other short-term studies that may have relevant data.

If the objective is to look specifically for resident stocks, surveys would need to be conducted June through October. Outside of that time frame, there will be migratory stocks in the area (late October to June 1). It is believed that current projects and/or past research can provide information to help answer many of these questions.

Another objective is to characterize the stock structure and abundance in this area, this would require an in-depth, and likely costly sampling project. For abundance, it was recommended that a hydro-acoustic survey option be explored prior to any further sampling program. Matt T is looking into what surveys are currently being conducted in this area that may provide relevant data. The Herring Juvenile survey data will provide quite good data on stock structure but is limited to the sampled transects. Collecting further data for this purpose would require a small seine purse survey to collect representative samples. DFO currently has a vessel that is capable of conducting this work, however, to adequately sample the area, each sampling trip would require at least 3 days. This is an incredibly costly and time consuming endeavor and Science is uncertain that it would yield any relevant data beyond what is currently being collected for the Juvenile Survey and other research projects.

- Will Duguid at UBC researching/project stomach contents from chinook year round to look at what they are eating. Working with Avid Anglers (DNA); and then taking DNA on the herring on the stomach contents. Nicole requested for him to present at the next salmon IMAT meeting.
- Salish Sea Marine survival project; Will Duguid may be working with PSF, Jaclyn was going to follow up with them.
- Potential methodology; Evelyn Brown for WA is using a light trap and it's catching anchovies and herring; could use it for data collection. *ACTION: IMAWG to share methodology and images of traps with DFO.

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As per other comments, I'm not sure that sampling herring directly would yield any useful data beyond what is already being collected.

- Indigenous communities want an overall better idea of what is happening in Area 17S, what's going on, why aren't they coming back; and at this point no one knows, including DFO science.

Matt and Jaclyn are continuing to look into the data that already exists within DFO Science to see if we can answer some of these questions. DFO would like to continue the conversation with First Nations about what sort of projects might be feasible, relevant and useful to address gaps in understanding about herring stock and spawn distribution South of Dodd Narrows.

Herring are present and abundant throughout the lower Strait of Georgia from November through February, despite there being abundant spawning habitat throughout this area, the spawn distribution has shifted and concentrated northward with >90% occurring between Nanaimo and Comox. Selection of spawning locations does not follow a salmon-like behaviours, in other words, herring are not thought to return to the same location they were born. It is not uncommon for herring to disappear from certain areas for short periods of time and then recolonize (spill-over) when conditions are favourable. Why herring haven't returned to spawn in certain areas (e.g. South of Dodd) for extended periods of time where they were known to spawn historically is unclear. It is possible that environmental conditions have changed (e.g. changing ocean conditions, substrate changes, availability of prey or predator pressure). Habitat monitoring and/or restoration may be a more useful pursuit in terms of potential joint project work. Examples of this type of work could include eelgrass or kelp bed rehabilitation, habitat monitoring biophysical environment (e.g. temperature, O2, plankton), or vegetation mapping. As above, data collection such as reporting spawn locations and timing or conducting surface surveys following data collection procedures provided in the Spawn Survey manual are incredibly helpful to the stock assessment program.

- *ACTION: Jaclyn to work follow-up with Isobel Pearson at PSF for the to see what they are working on the Salish Sea Marine Survival Project and how it might relate to herring management, Nicole to ensure that happens.
*ACTION: Sonora to send the project overview to DFO fishery managers and support team.
- Water quality data analysis hasn't been made public yet as the work is still happening.
- Recommendation to Laura; to find a way to bridge science with stock assessment and fisheries management; there is valuable research that provides a background to understanding of what is happening to species that is useful to share/use. Having a bridge between herring research, stock

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Commented [ANeuman1]: Jaclyn, can you confirm that you have committed to this work?

assessment and management regularly, or quarterly briefing notes from science to management. Gives an overview on priorities and research to possible present on ecosystem research.

- ***ACTION:** Nicole to follow up with Eleni on the data collection process and future work together, this to include how to preserve for samples. DFO collects 5 gallon pails that are frozen immediately. Easy way to take the sample is when the fish is thawed during the internal sampling by the DFO contractor.

Aggregate Management

- Spreading harvest spatially and temporally to avoid exploiting smaller populations; which speaks to changes in spawn timing over time.
- Similar to salmon; there is evidence if you focus the pressure on early run timed fish, you can either remove those specific fish entirely from the stock, or where natural selection kicks in and fish change behavior and change spawn timings. DFO historical data may be showing this; along with TEK. Problem is an ecosystem function for other species.

DFO - The Benson et al. 2015 paper identifies that although there is a lack of genetic differentiation, populations are spatially and temporally complex and that there is a risk of losing spatial diversity in a population. This paper recommends further evaluation of "spatio-temporal refugia" as a management procedure through simulation analysis. I believe this work has already been identified as future work in the MSE process.

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Also note that while herring demonstrate spatial-temporal complexity, it is different than salmon. Salmon "runs" tend to be genetically distinct populations, whereas in herring we don't see this genetic differentiation, rather, the differences seem to be behavioural.

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- Catch distributed on proportions both on time and location.
- Recommendations to consider changing up the harvest; practical rationale from DFO why this may not be plausible.
- Revisit this as an Objective in the MSE process; with the adequate framing to fit within the process. ***ACTION:** IMAWG to provide to the current Indigenous groups as an objective.
- DFO wants to ensure we (all via the MSE process) differentiate the means objective to an end objective.
- Recommend that DFO bring this objective forward to their Nations that they are engaging with for MSE as a possible recommended objective.
- DFO to ask Nations to ask about spawn timings and density, etc to help prompt TEK during MSE bilaterals.

MSE

- More technical recommendations to Nations.
- Concerns still regarding south of Dodds Narrows.

- Need to finalize the southern objectives with the Indigenous communities via QARS; DFO still haven't worked/seen any objectives from QARS.
- DFO UPDATE – A QARS MSE meeting has been set-up for Jan 23. They have indicated that they have proposed draft objectives that they would like to review at this meeting.
- Amber wants to encourage the objectives to be brought forward as its closet to co management we have come and concerns that QARS may have with current issues, MSE could quite possibly help with issues and co management.
- IMAWG will report to the members the importance of MSE and how it will help management and current issues local communities may have with their local herring stocks.

MSE 101

- Nicole received feedback from DFO and Indigenous communities.
- ***ACTION:** Nicole will incorporate MSE revisions/edits recommended in December.
- Goal is help communities to be more trusting and engage in the process.
- Nicole will pass back to DFO before giving out to communities.
- Glossary/Definitions would be helpful: ***ACTION:** Amber to provide to Nicole.

*Qualicum still working on Objectives; IMAWG can provide support to Qualicum if required.

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ACTION TABLE

Priority Item	Why is this important?	Questions/ Comments/ Feedback
Improved observations and reporting of spawn timing	Shifts in spawn timing may be occurring (TEK indicates this is the case, DFO data may indicate this is the case) but what is the importance of this? Shift in spawn timing may indicate that some of the earlier spawning sub-populations are being removed from the larger aggregate. Help determine accurate spawn timing. Help identify spatial/ temporal changes in spawn timing	<ul style="list-style-type: none">▪ Need more surface survey reports.▪ Communicate with community members the importance of reporting spawning activity and location.▪ Report this info to Matt Thompson- DFO contact for all Herring spawn observations.▪ Brochure/pamphlet to communicate why we want spawn info/why it is important. - DFO has this. NF follow-up to get a copy of this from Jaclyn.▪ IMAWG to post this to social media page.▪ First Nations to develop database for future reference to house this information.▪ Incorporate observations into TrailMark database.

Priority Item	Why is this important?	Questions/ Comments/ Feedback
Improved observations and reporting of spawn timing (CONTINUED)	CONTINUED	<ul style="list-style-type: none">▪ Map traditional harvest locations within territories to see changes/patterns over time.▪ Nations to participate in overflights, to provide TEK, insight, etc. Contact Amber Neumann to be involved.▪ Also record evidence of predation (seabirds, whales, sealions, etc.)

Priority Item	Why is this important?	Questions/ Comments/ Feedback
Herring genetic data collection	<ul style="list-style-type: none"> • Can help to support U of W genetics research. • Can help identify discreet populations of herring • Can help support change from aggregate based management. 	<ul style="list-style-type: none"> ▪ Provide contact details for Eleni Petrou at U of W. ▪ Eleni to provide sampling methods and equipment to interested Nations ▪ Eleni can help with analysis and provide cost estimate. ▪ DFO to have Eleni present on research. ▪ DFO to incorporate Eleni's research into Literature review to inform future management. ▪ DFO collect/analyze DNA data from food and bait fishery this year.
Explore other ecosystem indicators of herring presence/spawn timing	<ul style="list-style-type: none"> • Surf scoters indicators that younger herring had moved into the area. • Can help indicate when herring are present in the area. 	<ul style="list-style-type: none"> • Create list of bird species known to primarily feed on forage fish (using scientific literature, etc.) • Contact Environment Canada to get details on bird overflights and records (including species and areas). Surf scoters. • NF follow-up re: land-based bird records/database.

Priority Item	Why is this important?	Questions/ Comments/ Feedback
Aggregate Management of SoG and WCVI	<ul style="list-style-type: none"> • Fails to recognize existence of smaller sub-populations. • Smaller populations may be extirpated. • Does not allow us to know if a stock is rebuilding. 	<ul style="list-style-type: none"> • Spread out harvest (spatially and temporally) to avoid exploiting smaller populations. • Re-visiting Objectives: DFO engaging in parallel process where operational objectives are being recorded in bilateral process. DFO Management to meet with NTC re: operational objectives for this years IFMP. Policy decisions rather than technical.

ACTION/PRIORITY ITEM	RECOMMENDATIONS/ NEXT STEPS
MSE Process to date	<ul style="list-style-type: none"> ▪ Overall MSE process has taken steps in the right direction but it still does not allow for management on smaller spatial scale; fails to address concerns south of Dodds Narrows. ▪ Need spatial management of stocks (more localized scale) ▪ Articulating Southern SOG Objectives will help to clarify if South Island Nation Objectives can be addressed through MSE process or if something else is needed (e.g. working group, etc.). ▪ Important for Nations to get their Objectives finalized so that they can be taken into account by DFO Management when making decisions, and for simulation testing (e.g. catch

	<p>cap, aggregate management , etc.).</p> <ul style="list-style-type: none"> ▪ Include Prey availability objectives.
2018/2019 Management Actions	<ul style="list-style-type: none"> • If Nations have concerns with Management Actions, use the technical documents (e.g. Science Response) to draw out uncertainties and reiterate to management. • Support Science recommendations.
Lack of Herring/Spawn in Area 17S and lack of information	<ul style="list-style-type: none"> • Need more research to determine if herring present in the area year around? Are they just not spawning there? • Community observations of herring presence, predation, etc. • Monthly standardized sampling to get a picture of herring presence year-round. • Explore light trap methods (Evelyn Brown) for potential forage fish sampling program. • DFO may be able to help to provide nets/equipment for sampling. • Don't want to undervalue importance of herring dynamics in all of Area 17. • Review SSMSF project water quality data, or connect DFO with PSF to provide data for analysis. Map where water sampling has been/is being conducted. (Isobel Pearsall contact info to Jaclyn). • DFO to work with FN to help to identify appropriate sampling locations. • Jaclyn to follow up with PSF, and others to determine what information is being collected on a regular basis and where the gaps are.

Campbell, Erin

From: Sonora Thompson <smorin.imawg@gmail.com>
Sent: Friday, February 9, 2018 8:27 AM
To: Postlethwaite, Victoria
Cc: Brown, Laura (Pacific); Kelly, Gerry; Spence, Brenda; Goruk, Andrea; Bukta, Christine; 'Nick Chowdhury'
Subject: RE: 2018 Herring IFMP DRAFT - Recommendations from IMAWG
Attachments: 20180208 Herring IFMP IMAWG Recommendations to DFO.docx

Big apologies; our President signed the DRAFT version (lots of activity right now and late nights); please utilize the attached, thank you.



Sonora F. Thompson
Executive Director, Island Marine Aquatic Working Group
7973 Chemainus Road, Chemainus BC, V0R 1K5
Mobile: 250-202-0037
www.imawg.ca

From: Sonora Thompson [mailto:smorin.imawg@gmail.com]
Sent: February-08-18 9:51 PM
To: 'victoria.postlethwaite@dfo-mpo.gc.ca'
Cc: 'Brown, Laura (Pacific)'; 'Kelly, Gerry'; 'Spence, Brenda'; 'Goruk, Andrea'; 'Bukta, Christine'; 'Nick Chowdhury'
Subject: 2018 Herring IFMP DRAFT - Recommendations from IMAWG

Hello DFO Herring;

Please find attached the recommendations for the DRAFT Herring IFMP.

If you have any questions or comments, please contact us back at anytime.



Sonora F. Thompson
Executive Director, Island Marine Aquatic Working Group
7973 Chemainus Road, Chemainus BC, V0R 1K5
Mobile: 250-202-0037
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Island Marine Aquatic Working Group
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Chemainus BC, V0R 1K5

February 8, 2019

Victoria Postlethwaite
Pelagics Management Unit
Fisheries and Oceans Canada
200-401 Burrard Street
Vancouver, BC, V6C 3S4
via: Victoria.postlethwaite@dfo-mpo.gc.ca

RE: 2017/2018 DRAFT PACIFIC HERRING INTEGRATED FISHERIES MANAGEMENT PLAN (IFMP)

Dear Ms. Postlethwaite;

The Island Marine Aquatic Working Group (IMAWG) has reviewed the 2017/2018 DRAFT Pacific Herring Integrated Fisheries Management Plan effective **November 7, 2018**. This letter is a combination of a summary of the advice and recommendations from the 2017 IMAWG Herring technical, Tier One and Two meetings with scientific support of the IMAWG biologist.

IMAWG and the participants would like to remind Fisheries and Oceans Canada (DFO) that First Nations have priority access, after conservation, as per Section 35.1 of the Constitution Act, with the obligation of the Department to engage in direct bilateral consultation with First Nation governments. Under no circumstance is IMAWG to replace direct fiduciary bilateral DFO to band consultations.

ESTABLISHING HERRING MANAGEMENT OBJECTIVES FOR PACIFIC FISHERY MANAGEMENT AREAS 14-18 (STRAIT OF GEORGIA)

Through-out the last few years, IMAWG and Island Nations have been working with DFO to ensure that the management of herring is supported through the best possible science and collaboration with Indigenous communities around Vancouver Island. IMAWG's goal is to ensure that DFO works within a precautionary ecosystem approach with ongoing involvement of First Nations within the Management Strategy Evaluation (MSE) process. IMAWG and Island Nations have been very clear that areas which have low abundance and/or productivity, limited spawn, and/or show signs of slow rebuilding, must remain closed to commercial fishing until such time as local observations by First Nation communities indicate changes otherwise.

During the Herring Tier Two meetings, DFO indicated that their goal is to continue to develop a new management framework (MSE), that is compliant with the Precautionary Approach and features: measureable management objectives (developed in consultation with First Nations), limit reference point/upper stock reference points, updated harvest control rules to meet management objectives, and better informed

stock assessment models to inform fisheries planning. As we have heard, the Nuuchah-Nulth Tribal Council, via a Uu-a-thluk Fisheries herring technical working group, has started to develop management objectives for the West Coast herring areas, and DFO is looking to create the same concept for the Strait of Georgia (specifically at this time, Pacific Management Areas 14-18). Although the intention of our Herring Tier Two meeting was to start developing management objectives for this specified area, it was clear that a more localized approach was required. This is especially important given the diverse spatial characteristics of herring in the Strait of Georgia, combined with the varied priorities and needs of the First Nations in this area.

HARVEST ADVICE, INCLUDING AM1 VS. AM2, LIMIT REFERENCE POINTS (LRP) AND UPPER STOCK REFERENCE (USR) POINTS

Island Nations recognize that the Department is currently in a transitional period to a MSE process for herring. In absence of something better, DFO is continuing with last year's interim approach for the 2017/2018 season whereby both assessment models are provided to inform fisheries planning. Island Nations also recognize that both models have limitations and uncertainties; however, the AM2 model achieves the more precautionary approach of the two and is more consistent with observations from First Nations and the spawn survey data. For these reasons and in the absence of something better, IMAWG and the participants in attendance prefer the use of the AM2 model during this transitional period. **We would like to point out that Chief and Council and/or hereditary system has final authority.**

During our Herring Tier meetings, IMAWG was informed that the LRP represents a point when the stock status is below a level where serious harm to productivity is likely to occur. Current DFO Science advice (Canadian Scientific Advice Secretariat [CSAS]) provided an LRP of $0.3B_0$ (30% unfished biomass) for all five of the major Pacific Herring stock areas. The LRP will inform conservation objectives identified through the MSE and assist with evaluating potential changes to the harvest control rule. The LRP is also used as a tool to guide fisheries management, and ensure management actions are taken before the LRP is reached, as identified in the Precautionary Approach.

As IMAWG recognizes, the identification of a LRP is an improvement from the status quo and as mentioned, IMAWG participants recognize that DFO is in a transitional period, so the provided LRP is a good starting point to inform fisheries management this year, but further work is needed going forward. As identified through the CSAS Science Advice process, more work needs to be done to evaluate and simulation test the LRP and USR's. In order for the LRP to be implemented we need to consider the probability of avoiding it, as well as the time-frame to be evaluated with simulation testing. As management objectives are identified through the MSE process, ongoing simulation testing will need to occur to determine if the current LRP ($0.3B_0$) and provided USR's are sufficient to meet these objectives.

In addition, the current large-scale, blanket approach to management is not favoured by Island Nations. The overall management and development of LRP's and USR's on a smaller spatial scale (i.e., more area specific) must be explored. As traditional ecological knowledge (TEK) indicates, numerous, diverse, sub-stocks of herring used to be present in the Strait of Georgia, these discreet stocks would spawn in small bays throughout the Strait, but TEK indicates that the majority of the spawning populations within these smaller stocks were removed when the commercial fishery occurred in these areas. Further considerations must also be made in an effort to incorporate ecosystem conditions and habitat characteristics into herring management.

There is also concern that the old fixed (commercial) cutoff levels are not appropriate to ensure long term sustainability and conservation of herring populations. This is illustrated in areas where the commercial cutoff is at the LRP (e.g. Central Coast) or where the difference between the commercial cutoff and the LRP is less than 4,000 tonnes (e.g. WCVI).

ECONOMICS VS CONSERVATION (MANAGEMENT WITHIN THE STRAIT OF GEORGIA)

There is a perception among Island Nations that DFO is managing herring fisheries in favour of the commercial fishing industry. DFO has been very clear that their goal is to manage for conservation purposes and their hope is to flush out a direction that guides decision making through the MSE process and the creation of management objectives. Providing TEK is very important for DFO, as this specific type of data/information can highly impact/inform senior management within DFO regarding commercial fishery closures. IMAWG will encourage community knowledge holders to share this information, however there needs to be an understanding by DFO that TEK may have gaps due to colonization effects. Furthermore, there needs to be recognition and acknowledgement by DFO that when this information is shared that it will be utilized appropriately. For example, through the Herring Joint Technical Working Group and during the CSAS Peer Review on the Stock Assessment for Pacific Herring in British Columbia in 2017 and Forecast for 2018, First Nations participants pointed out the lack of inclusion of local/First Nations observations from the regional herring stock status summaries in the 2017 Science Advisory Report (SAR). First Nations observations were included in last year's Science response document for each stock area (where available), but when this was brought up during the peer review process this year, First Nations participants were informed that these would not be included in the SAR because there is no formal way to include them (i.e., there is no appropriate header or section within the document to include TEK or local area observations). Without including this in the formal science response documents, which inform fishery management and decision making, there is no way to know if this information is reaching fishery managers and if/how it might be considered when making management decisions.

Going forward, IMAWG would like to ensure that First Nations observations are included in the formal science advice (whether that be a Science Advisory Report, or a Science response) every year. Science documents must be comprehensive and contain key

information relevant to the users of the resource. Including information that is imperative to the success of First Nations fisheries is to provide adequate information to herring managers to interpret the status of the resource and have meaningful discussions about how to balance the needs of not only First Nations, but all user groups, including conservation. Furthermore, incorporating TEK into scientific processes is to align with the Ministers Mandate and promise for a renewed nation to nation relationship and commitment to reconciliation with Indigenous peoples of Canada.

During the herring action planning meeting in December 2017, it was discussed that the creation of preferred harvest maps may be able to help showcase TEK, missing TEK, education on how information is gathered/observed and how aboriginal law is applied. The Oceans Protection Program (OPP) has already begun to create specified maps in relation to spill response; there may be an opportunity to utilize their maps as a foundation.

RESIDENT STOCKS IMPACTS FROM THE COMMERCIAL FISHERIES

The impact of herring fisheries on the ecosystem as a whole has been a major concern of the Island Nations, particularly the food and bait fishery in the southern Strait of Georgia due to the large increases in Total Allowable Catch (TAC) with little consideration given to both the idea of resident stocks and other species that depend on herring. As mentioned previously, based on local observations and TEK, smaller scale observations and beliefs indicate that there are sub-populations of pacific herring in the Strait of Georgia that return to the same areas to spawn year after year; this has a direct impact from commercial harvesting, since the current management approach is on a large spatial scale and weaker sub-populations are vulnerable to heavy impacts. DFO has been clear in past correspondence and conversations that genetic testing done in previous years has indicated inconsistencies with TEK reports. Collection of this genetic information within DFO was done a few decades ago, and during our action planning meeting in December 2017, IMAWG suggested that DFO should re-visit collecting this information similarly, or in collaboration, with the University of Washington's current herring genetic research program. With the very recent advances and improved precision/alternatives in genetic testing (e.g. mitochondrial DNA vs. nuclear DNA), IMAWG feels that it would be worth looking into further research for the Strait of Georgia.

Please provide a written response directly to smorin.imawg@gmail.com, within 30 days
of the date on this letter.

Sincerely,

Nick Chowdhury, IMAWG President

Cc: Laura Brown, Area Director South Coast, DFO
Gerry Kelly, Aboriginal Affairs Advisor, South Coast, DFO
Brenda Spence, A/Resource Management Pelagics, DFO
Andrea Goruk, West Coast Vancouver Island Area, South Coast Resource
Management Coordinator, DFO
Christine Butka, A/Resource Manager Herring, DFO
Vancouver Island Indigenous Government

Item	Page/Section Reference	Heading	IFMP Text	Question/Concern/Feedback
1	18 / 1.3.1	Type of Fishery and Participants- First Nations	Entire Section	<ul style="list-style-type: none">• Recommend that you have the section replaced with the "Value of the Herring to Indigenous People of British Columbia" written by First Nations supported by the AAROM groups. There is an opportunity to provide an educational component of the relationship between First Nations and herring that moves beyond indicating the First Nations have food, social and ceremonial access. IMAWG can provide an suggested section.

Item	Page/Section Reference	Heading	IFMP Text	Question/Concern/Feedback
2	19 / 1.4.1	Location of Fisheries, First Nations	"First Nations harvest of whole herring, spawn on kelp, and spawn on boughs for FSC purposes occurs coast wide, subject to appropriate licensing and area closures. There are also treaty and aboriginal commercial fisheries occurring in some management areas."	<ul style="list-style-type: none"> Indigenous communities harvest herring according to their customs, laws and/or treaties within their traditional territory while engaging in protocols with other communities to harvest in other areas outside established boundaries. The wording in IFMP is perceived as very "controlling" and colonial. We know that communal licenses are issued, but fishing locations go beyond just "DFO" systems.
3	22 / 2.2	Ecosystem Interactions	"Research is ongoing to better understand these ecosystem processes and the role herring plays in maintaining the integrity and functioning of the ecosystem."	<ul style="list-style-type: none"> For the second year IMAWG wants: a brief list or description of ongoing research initiatives. Create a list all the species that feed/utilize herring. This section under values/showcases herring as the foundation to the marine ecosystem.

Item	Page/Section Reference	Heading	IFMP Text	Question/Concern/Feedback
4	18 / 3.1	Social, Cultural, and Economic Importance	"The herring fisheries are also extremely important to BC First Nations, both commercially and as traditional food."	<ul style="list-style-type: none"> Reference "Item 1" recommendation of this table. You can remove this wording IF a complete a thorough section is written re: "Value of the Herring to Indigenous People of British Columbia". Simply just stating that herring is "extremely important" isn't painting the full picture.
5	22 / 4.2	Recreational	"Improvements to catch monitoring programs for recreational fisheries are under development."	<ul style="list-style-type: none"> For the second year IMAWG wants: provide a list of the improvements?
6	33 / 4.3.1	Commercial	Fishery openings may be spatially and temporally separated to avoid gear conflicts or closed to avoid sensitive areas, for navigational purposes, or to provide access to First Nations to harvest fish or spawn.	<ul style="list-style-type: none"> This statement is falsely misleading; some indigenous communities have requested closures in specific areas (i.e. West Coast and south of Dodds Narrows), however DFO keeps areas open unless pressured with legal action/wins by First Nations. DFO is not closing by request of First Nations; it's is strictly by management/stock assessment decisions. Please provide a list of the DFO areas that a currently remaining closed due to "sensitivity or to provide access."

Item	Page/Section Reference	Heading	IFMP Text	Question/Concern/Feedback
7	22 / 4.3.2 23 / 4.3.4	Spawn on Kelp Special Use	"The amount of herring used in a herring enclosure, number of enclosures, disease impacts, mortality estimates, and general management practices for this fishery require further examination to ensure that stock and ecosystem impacts are better understood."	<ul style="list-style-type: none"> For the second year IMAWG wants: the results of the examination and the mitigation measures in place to deal with potential stock and ecosystem impacts.
8	37 / 4.8.4	Strategic Framework for Fishery Monitoring and Catch Reporting in Pacific Fisheries	"Managers and fishery participants will work together to address those gaps over time."	<ul style="list-style-type: none"> Change to: Managers, Indigenous communities and fishery participants will work together to address those gaps over time."
9	44 / 5.2	Objectives – Pacific Region	"The overall goal of Fisheries Management in the Pacific Region is the conservation of Canada's fisheries resources to ensure sustainable resource utilization and generate economic prosperity, accomplished through close collaboration with resource users and stakeholders based on shared stewardship consistent with treaty and Aboriginal rights."	<ul style="list-style-type: none"> For the second year IMAWG wants: Change wording to "the conservation of Canada's fisheries resources while ensuring priority Food, Social and Ceremonial access to First Nations, ensuring sustainable resource utilization and generating economic prosperity." This reflects the true priority as it is not economics first but First Nations access.
10	44 / 5.3	Pacific Herring Resource Management	Objectives for management of Pacific Herring include stock conservation and sustainable harvest, ecosystem	<ul style="list-style-type: none"> Again, all management statements are required to be followed as conservation, First

Item	Page/Section Reference	Heading	IFMP Text	Question/Concern/Feedback
			processes, renewal of the management framework, consultation, and social, cultural, and economic considerations are outlined below.	Nations priority access, etc. Change statement to reflect as such.
11	44 / 5.3.1	Stock Conservation and Sustainable Harvest	"The biological objective is to conserve and protect Pacific herring stocks while providing sustainable harvest opportunities..."	<ul style="list-style-type: none"> For the second year IMAWG wants: Sustainable harvest opportunities for...insert First Nations priority access and then commercial/recreational "industry".
12	45 / 5.3.3	Renewal of the Management Framework for Pacific Herring	"IHPC also recommended establishment of a working group to review and provide advice regarding the coast-wide stock assessment program for Pacific herring."	<ul style="list-style-type: none"> For the second year IMAWG wants: Is this statement referring to the Herring Technical Working Group or will this be a separate working group?
13	48 / 7	Management Measures for the Duration of the Plan	"SOG: Stock biomass is high and growth rates are positive. The area has supported commercial fisheries for the past 30 years. A 20% harvest rate will be applied in this area."	<ul style="list-style-type: none"> As heard at IMAWG meetings, Hul'qimi'num nations have not been able to access herring or roe in recent years because of the low abundance in this area. For this reason, they not support the 20% harvest rate south of Dodd Narrows and would like to see this area closed to the commercial fishing industry until the stocks in this area recover.

Item	Page/Section Reference	Heading	IFMP Text	Question/Concern/Feedback
14	49 / 9.1	Performance Evaluation Criteria – National	Provide harvest opportunities in a manner consistent with the Sparrow Decision (SCC 1990) and other relevant court decisions and treaty obligations.	<ul style="list-style-type: none"> Change word “provide” to “ensure”. The Department doesn’t provide opportunities for First Nations; they ensure that First Nations have access after conservation and before industry.
15	50 / 9.3.2	Consultation	Facilitate consensus building among First Nations and stakeholders on issues related to the management of the fishery.	<ul style="list-style-type: none"> There is no consensus based decision making with multiple First Nation governments; its only advice/recommendations through Tier meetings regarding science and management of the resource. Change sentence to: Engage in fiduciary bilateral consultations with local indigenous communities, and participate in collaborative engagement meetings with First Nations from watershed groups and industry to discuss priorities for the management of the fishery.
16	50 / 9.3.3	Social, Cultural, and Economic Considerations – First Nations	DFO will consult with First Nations through established processes and bilateral meetings to develop fishing plans to authorize fisheries and conduct post-season reviews.	<ul style="list-style-type: none"> DFO does not specifically conduct herring post/pre season meetings with First Nations. Change sentence to: DFO will consult directly with Indigenous communities through fiduciary bilateral consultations supported by Tier Two engagement processes to

Item	Page/Section Reference	Heading	IFMP Text	Question/Concern/Feedback
APPENDICES				
17	54	Social, Cultural, and Economic Considerations - First Nations - Performance Measure - DFO Activity	DFO consulted with First Nations in meetings and in bilateral discussions in the fall/winter of 2016. First Nations were issued Communal Fishing Licences to authorize fishing for herring and spawn on kelp or boughs. Meetings were also held in-season and postseason to review and discuss issues and concerns.	<ul style="list-style-type: none"> • Don't you mean 2017? • Change meetings to Tier Two engagement sessions. • Remove "authorized" and change to: Communal licences are issued to Indigenous communities that outline priority fishing access. • There are no post/pre season specific meetings. • As heard at IMAWG meetings, Hul'qimi'num nations have not been able to access herring or roe in recent years because of the low abundance in this area. For this reason, they not support the 20% harvest rate south of Dodd Narrows and would like to see this area closed to the commercial fishing industry until the stocks in this area recover.
18	75 / 5.1.1	Implementation of Limit Reference Point (LRP) in Stock Assessment Advice	"Application of a 20% harvest rate will result in overall potential harvest of up to 28,881 short tons and a corresponding potential roe harvest of up to 21,944 short tons. "	

Item	Page/Section Reference	Heading	IFMP Text	Question/Concern/Feedback
19	75 / 5.1.2	Consultation and Reconciliation with Indigenous Peoples	The proposed management approach considers reconciliation with Indigenous peoples. Consultations with First Nations to elicit local knowledge and further address any management concerns will continue throughout the fishing season. Priority access is provided to First Nations for FSC fisheries to occur in all areas, and no closures are planned, as catch levels are limited and not anticipated to impact herring stock levels.	<ul style="list-style-type: none"> • How can a management approach consider reconciliation when there is no guiding document from the Minister that outlines how that reconciliation is defined or implemented? You can't just say you meet with First Nations and that is considered "reconciliation". First Nations consultation is part of DFO's legal obligation and does not constitute reconciliation. Remove unless you have defined measurable reconciliation considerations that you are prepared to list. • DFO does not provide priority access; they ensure priority access is given before industry.

Campbell, Erin

From: Cathy Galligos <cathy.galligos@tn-bc.ca>
Sent: Wednesday, February 21, 2018 11:23 AM
To: Warren Johnny; Tyrone Wilson
Cc: Bukta, Christine; Gerry Galligos
Subject: RE: FSC access from Test Vessel

Hi Warren:

Tyrone is in Executive Council today. So, I will just provide some information.

Tla'amin nation is located in Powell River. Our key fishing area is Area 15 in which Tla'amin Nation has been requesting a permanent closure for commercial herring fishery to all of Area 15 – 1 to 15 – 5. We too want to see the herring return to our area for a full life cycle and we have made this very clear to DFO several times. But if there happens to be test fishing in our area, we would like to get some herring from the test vessel.

So, as you said, coordination is a shot gun notice. So, it may OR may not work for us but we would like to try. We would have to boat over from Powell River to Comox area (assuming the test fishery is more in the Comox area). So it would be weather pending for us whether we can make it over or not on a last minute notice in the early morning. It would take us approximately 2 – 3 hours to get there upon initial notice.

In addition, we may be able to just put a tote in the back of a truck and ferry it over.

Anyways, just giving you a bit of information.

Thank you.

Cathy Galligos

From: Warren Johnny [mailto:Warren.Johnny@stzuminus.com]
Sent: February-21-18 11:14 AM
To: Tyrone Wilson <tyrone.wilson@tn-bc.ca>
Cc: Cathy Galligos <cathy.galligos@tn-bc.ca>; Bukta, Christine <Christine.Bukta@dfo-mpo.gc.ca>
Subject: RE: FSC access from Test Vessel

Hi Tyrone,

I'm the 2018 Herring Communications Coordinator and will be talking to the test vessel about opportunities to access whole herring from the boat. I'm just wondering where you are located? There is no guarantee the test vessel will be able to assist as his main objective is test fishing for herring, but In the past the test vessel would provide whole herring very early first thing in the morning if they were able to assist. Coordination between me and the nation is shot gun notice to pick up herring from the boat and you have to bring a tote and buckets to hand palm herring onto your vessel.

Look forward to hearing back from you.

Regards,

Warren Johnny, 2018 South Coast Herring Communications Coordinator

From: Cathy Galligos [<mailto:cathy.galligos@tn-bc.ca>]

Sent: February 21, 2018 10:31 AM

To: Bukta, Christine <Christine.Bukta@dfo-mpo.gc.ca>; Warren Johnny <Warren.Johnny@stzuminus.com>; Tyrone Wilson <tyrone.wilson@tn-bc.ca>

Cc: Preston, Paul <Paul.Preston@dfo-mpo.gc.ca>; Neuman, Amber <Amber.Neuman@dfo-mpo.gc.ca>

Subject: RE: FSC access from Test Vessel

Hi Christine (and Warren):

Thanks for the contact information for Warren Johnny.

Yes, Tla'amin is very interested in receiving any herring from the Test vessel. Tla'amin can definitely have our boat go meet the test vessel or go the offload site.

s.19(1)

Tyrone would be the first point of contact. In addition to his office # listed below, His cell # is: [REDACTED].

My direct office # is: 778-762-5049 and my cell is : 604-414-4376.

Thank you.

Cathy Galligos
Director of Lands and Resources
Tla'amin Nation

From: Bukta, Christine [<mailto:Christine.Bukta@dfo-mpo.gc.ca>]

Sent: February-07-18 3:44 PM

To: Warren Johnny <warren.johnny@stzuminus.com>; Cathy Galligos <cathy.galligos@tn-bc.ca>; Tyrone Wilson <tyrone.wilson@tn-bc.ca>

Cc: Preston, Paul <Paul.Preston@dfo-mpo.gc.ca>; Neuman, Amber <Amber.Neuman@dfo-mpo.gc.ca>

Subject: FSC access from Test Vessel

Hello Cathy, Tyrone and Warren,

I wanted to put you all in contact with each other. As Tla'amin is interested in accessing FSC from the test vessel if possible. Please note that there is no guarantee but the test boat has been able to in some past years. My understanding is that it is coordinated by Warren Johnny and the test vessel. Tla'amin will have to come out and pick up the fish from boat or at the offload site.

If I have any of your contact information wrong please respond to this email.

Cathy Galligos
Cathy Galligos <cathy.galligos@tn-bc.ca>
Tla'amin Director of Lands and Resources
604-483-9646

Tyrone Wilson
Fisheries Technician
604-483-4111

Tyrone.wilson@tn-bc.ca

First Nations Herring Coordinator

Warren Johnny <Warren.Johnny@stzuminus.com>

Christine Bukta

Resource Manager

Fisheries and Oceans Canada, South Coast Area / Government of Canada

940 Alder Street, Campbell River, BC V9W 2P8

christine.bukta@dfo-mpo.gc.ca /Tel: (250) 286-5888 /Cel: (250) 204-0312

Gestionnaire des Pêches

Pêches et Océans Canada, Secteur de la Côte Sud / Gouvernement du Canada

940 Alder Street, Campbell River, C-B , V9W 2P8

christine.bukta@dfo-mpo.gc.ca /Tél. : (250) 286-5888 /Tél. cell. : (250) 204-0312

Campbell, Erin

From: Warren Johnny <Warren.Johnny@stzuminus.com>
Sent: Tuesday, April 3, 2018 2:06 PM
To: Spencer, Kent
Cc: Bukta, Christine; Eric Kesteloot
Subject: First Nations' Communications Coordinator final report
Attachments: First Nation Herring Communications Coordinator final report 2018.docx

Hello Kent,

Hope everything is well these days. Attached you will find a final report of the 2018 herring season from myself as the 2018 First Nations' Herring Communications Coordinator.

Can you please ensure the appropriate personnel receive a copy.

Regards,

Warren Johnny, 2018 First Nations' Herring Communications Coordinator

2018 First Nation Herring Communications Coordinator Report



Prepared by: Warren Johnny, 2018 First
Nations Herring Communications
Coordinator

Prepared for: Department of Fisheries and
Oceans Canada C/O Kent Spencer

2018 First Nation Herring Communications Coordinator Report

Introduction:

The harvest of Pacific herring by First Nations' communities on the East Coast of Vancouver Island for food, social and ceremonial (FSC) purposes has been a very important practice and is also an important dietary resource for the East Coast Vancouver Island First Nations' communities since time immemorial.

The ability to harvest herring and herring roe on cedar boughs / kelp within the immediate territories or within the traditional territories of Southern First Nations' has become nonexistent in the Southern portions of the Georgia Strait due to lack of spawning activity since 2015. This has caused southern First Nation communities to struggle to keep alive a cultural practice of gathering and preserving herring while at the same time teaching younger generations of their cultural identity and annual cultural practice related to herring. Pacific Herring has always served as an essential food source not only for our communities, but also for other predators our communities rely on for food sustenance such as (Salmon, Ground Fish, and Ducks).

The Department of Fisheries and Oceans Canada recognizes the importance of herring to First Nations and the potential for conflict between Commercial fishermen and First Nations fishermen gathering FSC herring. To reduce the possibility of conflict between the commercial fishermen and First Nation fishermen DFO funds a First Nations Herring Communications Coordinator (F.N.H.C.C) to work collaboratively with First Nations' communities and Fisheries and Oceans Herring Resource Management during the herring spawning season. The objective of the F.N.H.C.C is communicating herring spawning activity, herring test vessel results, herring overflight information to DFO Resource Management and First Nations' herring fishing plans to DFO Herring Resource Management. The F.N.H.C.C also assists in the planning of a pre-season herring meeting between First Nation and Fisheries and Oceans herring resource management and a post season herring meeting if required.

Information gathered by the F.N.H.C.C from DFO herring resource management during the spawning season regarding commercial industry, herring test vessel information, herring overflight assessments, and occurrences related to herring are shared with a list server of First Nation contacts from Klahoose First Nation – Cortes Island down to the South Coast Sannich Tribes including the Sunshine Coast First Nations. First Nations herring fishing plans are shared with DFO Resource Management to assist and communicate to the Herring industry to prevent the potential for conflict between the two groups chasing the same species. The program has worked very favorably for both the First Nation communities and for the commercial fleet in 2018 and the F.N.H.C.C in 2018 has actually extended communications with not only the southern First

2018 First Nation Herring Communications Coordinator Report

Nations, but in 2018 has communicated with the Sun Shine Coast First Nations and Northern First Nations in Campbell River and Cortes Island.

Outlined below are the 2018 F.N.H.C.C responsibilities:

- The Coordinator will poll First Nations fronting the Strait of Georgia to establish a line of communication and to determine interest level and scope of the participation in the 2018 herring fishery.
- The Coordinator will coordinate pre-season and post-season meetings as required.
- The Coordinator will assist where needed a coordinated fishery amongst mid-Vancouver Island Nations.
- The Coordinator will assist in the coordination of the FSC fisheries as required, including the organization of participating parties and gear, to ensure that Nations' who wish to participate have opportunities.
- The Coordinator will on a daily basis or more frequently as required, develop and communicate to the DFO Herring Resource Managers an understanding of the fishing activities proposed or anticipated by the participating First Nations. Activities will include proposed fishing locations, gear, expected level of effort, personnel involved, and changes that may arise.
- The Coordinator will on a daily basis or more frequently as required, communicate to participating First Nations the development of herring activities in the area, areas of spawn, and anticipated or developing commercial fishery patterns.
- The Coordinator will assist First Nations to ensure their fishery is conducted within the scope of their Communal License.
- The Coordinator will monitor on the ground, where and when appropriate, FSC harvest activity.
- The Coordinator will monitor catch and compile a record of catch data.

Herring Pre-Season Meeting:

A Pre-Season herring meeting was organized in by the First Nations Herring Communications Coordinator and Christine Butka, Herring Resource Management. The meeting occurred at the Stephenson Point Road Administration board room on Feb 22, 2018.

Agenda was as follows:

- Background and purpose of meeting to participants
- Review of Stock and Spawn data 2017/18
- Update on Food and Bait Fishing Season
- DFO Resources – on grounds, test vessels, and flights
- First Nations' fishing plans
- Commercial fishing plans (Gillnet and Seine)
- Area 17 South of Dodd's Narrows - update

2018 First Nation Herring Communications Coordinator Report

- Herring Reform – update

Minutes of Strait of Georgia First Nations Pre-Season Herring Meeting; Thank you Amber Neuman

Strait of Georgia First Nations Pre-Season Herring Meeting

Thursday Feb 22, 2018 12:30 pm – 3 pm

SCA Boardroom: 3225 Stephenson Point Road

Agenda:

Attendees - Bryan Rusch, Amber Neuman, Christine Bukta, Andrea Goruk, Linda Aidnell (Lyackson) , Wayne Paige (Cowichan Tribes), Ken Thomas (Penelakut), Warren Johnny (Herring Communications Coordinator, Stz'uminus), Terry Palfrey. Phone - Chad Ormond (QARS)

1. Background – Purpose of the meeting

Warren - Chaired meeting , Introductions.

Amber - take meeting notes

Additions/Deletions to Agenda

Wayne - Add protocol under other

Intro/Purpose to meeting

Review season to date and preview of roe season and communication/information processes.

Encourage discussion around issues of concern around herring. Collaboration with First Nations Groups and DFO on roe herring.

Working well together over last 3 years, always issues but group is working well together.

2. Review of Stock/Spawn data 2018 - Christine Bukta

Christine - presentation (Attached)

<<SOG FN Pre-season Roe Herring meeting Feb 22 2018_.pdf>>

FN - What is the purpose of the spawn survey?

DFO - Use spawn survey to determine the amount of eggs and how many herring are required to lay those eggs, which feeds into stock assessment model.

FN - How information is compiled, how does the department using this information? TEK is telling them that herring is moving out of our waters, water is getting warmer in our area

DFO - Gradual movement north of spawners is being observed. We have done tagging studies, they do generally come back to broad spawning areas where they were born (e.g. Strait of Georgia vs individual beach). There is a certain percentage that go somewhere else

FN - is there information on survival rates?

DFO - Past work on survival rates. Not a lot of studies since 90's. SOG is at near historic levels, however WCVI continue to decline despite no commercial fishery, not clear as to what is impacting the stocks.

FN - Department using the SOG as a management scale, we are asking for management at the scale of our territory. Agree with not opening 17S in 2018 but concerns about how these areas will be managed moving forward.

DFO - Common theme to start to look at managing on smaller spatial scales. First Nations coast-wide have expressed concerns around managing on major stock areas. Resource Management - will continue to bring this forward to science.

2018 First Nation Herring Communications Coordinator Report

FN - New funding to department for science. This should be directed to more research around herring, as it is a keystone species.

FN - If a single stock, do impacts of harvest further north impact the movement of fish north?

DFO - FN have been using feeder type ponds to draw in fish for centuries. As fish spawn, more and more fish will be drawn to that area.

Time-Series Maps of Herring Spawn and Catch

<http://www.pac.dfo-mpo.gc.ca/science/species-especes/pelagic-pelagique/herring-hareng/herspawn/pages/default2-eng.html>

South Coast Herring Spawners 1930-2015

http://www.pac.dfo-mpo.gc.ca/science/species-especes/pelagic-pelagique/herring-hareng/herspawn/BCS_spa-eng.html

Section 173s: S Yellow Point: 1930-2000

<http://www.pac.dfo-mpo.gc.ca/science/species-especes/pelagic-pelagique/herring-hareng/herspawn/GIF/0173s.gif>

Section 173n: N Yellow Point 1930- 2001

<http://www.pac.dfo-mpo.gc.ca/science/species-especes/pelagic-pelagique/herring-hareng/herspawn/GIF/0173n.gif>

Statistical Tables of Spawn and Catch Records

<http://www.pac.dfo-mpo.gc.ca/science/species-especes/pelagic-pelagique/herring-hareng/herspawn/pages/default3-eng.html>

3. Update on Food and Bait Fishery season - Christine Bukta

Christine - presentation (Attached)

FN - Has there been research into how commercial fishing impacts stocks. Example - theory that fishing for food and bait is impacting fish stocks coming in to spawn. How does fishery impact the substrate, habitat, overall stock?

DFO - May be some information from tagging studies, but in general this information does not exist.

FN - Request to do an impact assessment into why the fish are disappearing.

DFO - Opportunities for collaboration - DFO training, First Nations to collect data. Historically have only had resources to look at commercial fishing, what are other impacts.

FN - Elders have said that the best way to re-build a stock is to stop harvest. Also believe that Food and Bait fishery is impacting fish spawning, fishery is impacting juveniles and preventing them from returning to spawn. Happy that areas are closed now need to look at what are the actual impacts to stocks. Would like to see a continued microscope on the fishery. Reporting releases. Would like us to use their local knowledge.

FN - Look at concerns with predation, pollution, marine traffic and anchorages. Important to understand the impacts.

FN - South of Dodd Narrows - Would the department consider closing southern areas to Food and Bait to see if there is an improvement. See if that makes a difference. Department needs to learn to trust First Nations data and local knowledge.

DFO - Noted that the fishing in Subarea 29-5 has only been in the last few years. Although it has been heavy fishing in last couple of years.

DFO - Would need a tagging study which is intensive. E.g. Allocate a portion of TAC to research.

2018 First Nation Herring Communications Coordinator Report

In general First Nations groups expressed interest in working with DFO to conduct this research.

FN - Why are sea lions increasing?

DFO - We don't harvest them anymore so populations are continuing to increase.

DFO - Herring stocks are actually healthy in SOG, feeding sea lion populations.

4. DFO Resources – on grounds, test and flights (see attached) - Amber Neuman

- <<2018 SOG Herring Resources-Feb16.pdf>>
- Bryan & Terry can update txt lists - give them txt numbers (include Warren on these distributions)
- FN Interest in participating in the overflights - Warren, Ken (FN to coordinate through Warren to Christine).
- Majority of flights will depart from Nanaimo
- Some flights will depart from either Campbell River or Comox. Opportunity for some Northern SOG nations to join if interested.
- Flights will likely be every second to third day until April.
- Flights are scheduled short notice, best for Warren to respond to spawn flight update email, which usually states when next flight is.

5. FSC fishing plans – Spawn on boughs/kelp and whole herring

-Cowichan - Hoping to get some whole herring from test vessel - 2 totes. Roe in Deep Bay Area. Hoping to get 4 totes SOK (dive). Cowichan has 5 divers

-Tla'amin, Malahat, Penelakut, Stz'uminus - Expressed interest in totes of whole herring fish from test vessel.

-Stz'uminus - French Creek to fish for roe (raking).

-Penelakut - Request for Cowichan to help with SOK harvest. Starting a mentorship program with youth.

FN - Communicate to department (Terry) where boughs are set so he can communicate to gillnet fishery to avoid those areas.

Snuneymuxw, Nanoose - Not present but may have fishing plans.

6. Commercial Fishing plan (Gillnet roe herring) - Terry Palfrey

- Estimate 15 pools
- ~11,000t TAC, may not have the resources to harvest total TAC.
- Fishery likely last 15-25 days
- Usually start north (Cape Lazo) and progress southerly (Nanaimo).
- Area 17S closed, may truncate fishery timing.
- Gillnet fishery will typically help FN move boughs around if requested.
- Call/txt Terry if any questions/concerns.

7. Area 17 South of Dodd's Narrows commercial fishing plan update

- Confirm that 17 S will not open to roe commercial fishing in 2018.
- Explore opportunities for community technicians to assist in the collection of data. Frustration that TEK is not always solicited or utilized. Happy with Areas 17S not opening but would like more collaboration in the use of TEK. They are on the water and can assist the department in management goals.

2018 First Nation Herring Communications Coordinator Report

- DFO - Department still struggles with how to incorporate TEK but acknowledges it's importance and that this work needs to be done.
- Stz'uminus working in partnership Citizens of Science - Pacific Salmon foundation funded, working with Isabelle Purcell.
- FN - has department worked with Universities and other groups.
- DFO - the department has not regularly worked with universities or other groups. Part of the issue is non-standardized data. There are areas for improvement.

8. Herring Reform Update

- Evaluation of Management Decision Rules against objectives.
- 2 areas of focus - WCVI / SOG
- WCVI - NTC has developed draft objectives and using the simulation model to test.
- SOG
 - Proposing a large workshop with technical staff from FN in SOG. Learn about what MSE is, use WCVI examples. What might be objectives for SOG / specific areas.
 - Give groups an opportunity to hear concerns from different areas.
 - Decide - Moving forward, aggregation working group or work in smaller spatial scales?
 - FN - Starting in May means moving forward would be busy in summer with sockeye.
 - Entire SOG - Bigger groups tend to overpower smaller groups. Recommend meeting as a smaller group.
 - FN perspective - south coast (Nanoose - south)
 - Use AAROM groups to move this forward.
 - DFO - IMAWG is not the body to develop management objectives. Bringing AAROM groups together will miss some groups.
 - QARS - have discussed bringing in Nanoose/Snuneymuxw and Saanich tribes to these workshops.
 - DFO - Have to be mindful of resources, may be possible to have 2 workshops for Northern SOG and Southern SOG.
 - FN - Would like to see more of what NTC has done. NTC including Maa-nulth developed objectives independently and then presented to DFO to see if model helps to achieve/evaluate objectives.
 - Can contact science or NTC directly to get more information.
 - DFO - consider QARS and including Nations in Area 15 and 17 as there are similar objectives.
 - FN - This was supposed to happen last year but didn't. Thinks QARS can help coordinate this.
- JTWG - Joint Technical Working Group - Another avenue to feed into the fall science advice.
- If anything else comes to mind, communicate through Andrea.

*DFO to circulate information about herring reform from IMAWG - Send to Warren/Chad/Jordan to distribute as appropriate.

9. Other:

- a. **Test Vessel** - Warren will coordinate with First nations/Test Vessel. Barry willing to help Nations looking for whole herring. He's not set-up to do an actual fishery but can bring in about 1000lbs. If we're willing to put 2-3 totes at PBS. Who would arrange this?

2018 First Nation Herring Communications Coordinator Report

*Andrea will talk to Laura to see if this can be accommodated. 2 totes at a time and Barry will let us know when he can accommodate. Some Nations will be able to meet at the boat - French Creek, Qualicum, Denman Island.

Gillnet - If there is excess, Terry will let Warren know. Issue with excess is that it's typically not fresh.

b. **Protocol**

- FN - DFO stay out of Nation to Nation protocols.
- FN - First Nations feel that the department continues to push protocols.
- DFO - Department - encourages that there are protocols within/between territories but we are not involved.
- DFO - DFO will issue amended licences upon request.
- FN - First Nations have historically traveled without borders and they have their own protocols between Nations, there should not be departmental intervention.
- FN - With declining stocks will travel further than historically, they will respect the Nations that they are traveling to and establish their own protocols without departmental intervention.

Conclusion from F.N.H.C.C perspective: The F.N. Pre-season herring meeting allowed those Nations' in attendance to collaborate with DFO Resource management questions or concerns to be asked and allowed the DFO herring resource management staffs' with the opportunity to provide clarification where possible to attendees, but allowed First Nations' in attendance to discuss their 2018 herring and roe fishing plans and explain any concerns related to DFO resource management any concerns they had about FSC herring fishing. The meeting also provided First Nations' with the opportunity to hear commercial fishing plans, herring assessment plans, and meet key DFO Resource Management for the 2018 herring season, but also received a resource list of contacts within DFO and on the grounds during the 2018 herring season.

The following Vancouver Island First Nations' who were contacted in 2018 to establish the level of interest in participating in 2018 herring season are as follows below.

- Nanoose First Nation
- Snuneymuxw First Nation
- Lyackson First Nation
- Halalt First Nation
- Penelakut Tribe
- Cowichan Tribes
- Malahat First Nation
- Tsawout First Nation
- Tsartlip First Nation
- Stz'uminus First Nation
- Songhees First Nation
- Tsartlip First Nation
- Tsawout First Nation
- Tla'min First Nation

2018 First Nation Herring Communications Coordinator Report

- Klahoose First Nation
- ATL'EGAY Fisheries Society

The Halalt First Nation, Penelakut Tribe, Cowichan Tribes, Malahat First Nation, Stz'uminus First Nation, Tla'amin First Nation, and Klahoose First Nation expressed an interest in participating in the 2018 herring season to gather whole herring and herring roe for their communities to the FN.H.C.C.

All the above First Nations' received on a daily basis or more frequently if required information regarding commercial fleet fishery updates outlining commercial catch data for the gillnet roe herring fishery and Seine fishery catch, location fishing and when the industry started fishing and completed. The Gillnet herring roe fishery started on March 2, 2018 and after discussions with Gillnet pool captains closed Mar 7, 2018 @ midnight. Seine herring fishery began March 5, 2018 in Area 14 and on March 11, 2018 the Management platform vessel charter was completed with no further fishing without an at sea observer present on the fishing vessel was announced by DFO. On March 29, 2018 the Gillnet roe herring fishery started again on a spawn between Neck Point and Icarus Point and closed April 3, 2018 with approximate catch of 43 tons.

The F.N.H.C.C in collaboration with the DFO test vessel Denman Isle skipper was able to provide opportunity of approximately;

- 2 totes of whole herring to Tla'amin First Nation
- 250 lbs of whole herring to Klahoose First Nation
- 250 lbs of whole herring to Komoks First Nation
- and Cowichan Tribes was able to access 2 ton of whole herring and a ¼ ton of herring roe in 2018 to the Southern First Nation communities.

The Tla'amin, Klahoose and Komoks First Nations off loaded their herring in Comox and Cowichan Tribes worked with a commercial fisherman on the grounds to access their herring. Cowichan Tribes gathered herring roe on kelp by diving.

The F.N.H.C.C in collaboration with DFO herring resource management staff and Pacific Biological Station staff was able to secure an agreement to use the PBS dock for offloading of whole herring for Southern First Nations if the opportunity was to arise. The agreement was off loading and pick up of whole herring at PBS dock would be done during operational hours and that the F.N.H.C.C would contact the grounds manager and commissionaire at the PBS when off loading and pick up would occur.

Overflights;

24 overflights were conducted by DFO and started in late February 2018 and continued until the April 2017. The continued overflights are appreciated by the Southern First Nations' because it

2018 First Nation Herring Communications Coordinator Report

provides valuable information to these Nations' as herring spawn in the South much later than the Northern portions where it begins and the Southern First Nations' have in previous years collaborated with DFO resource management about the continuation of overflights in April for this purpose. Flights continue when this report is written and an approximate two to possibly three flights are expected after this report is sent to DFO.

An invitation was provided for a south coast F.N. rep to participate and for the herring communications coordinator to participate on flights if desired. The F.N.H.C.C wasn't able to participate any overflights in 2018, but because of the outreach to ATE'LGAY Fisheries this season by the F.N.H.C.C. a rep from that organization was able to participate in a couple of flights from Campbell River. The experience provided the participant with valuable insight to where herring were spawning and concentrated.

Fuel Spill Incident 2018

On February 24, 2018 a Canadian Navy ship "HMCS Calgary" spilled 30,000 liters of fuel into the Strait of Georgia. The F.N.H.C.C. contacted DFO Resource Management to discuss the spill and reiterated concerns of First Nations' planning to fish for Herring in the area of the spill. Collaboration between the F.N.H.C.C and DFO herring resources management allowed information to relayed to concerned First Nations' in the Strait of Georgia near where the fuel spill occurred.

Roe Herring Egg Cholera incident:

In 2018 a couple of F.N. members from one of the communities fell sick that was thought to be from the consumption of herring roe harvested. The F.N.H.C.C and DFO herring resource management worked together to provide information to First Nations' who may have collected herring roe from the affected area. Although there was concern that information was received a little late and after the fact. Information provided the list server of Nations' that the F.N.H.C.C. is in contact with to be aware of the issue and to dispose of any herring roe that may have been received from friends or relatives from the affected area.

Outcome and Conclusion:

In 2018 the First Nations' Herring Communications Coordinator extended communications further North and began communicating with First Nations' communities as far as Cortes Island "Klahoose First Nation" and for the first time communicated with a Sun Shine Coast First Nation "Tla'amin First Nation. Communication between these Nations' was very appreciated and added to the F.N.H.C.C list of Nations' who are communicated with each herring season. The DFO herring resources staffs in 2018 were very helpful and provided excellent information to the South Coast, Northern and Sun Shine Coast First Nations' community fisheries technician regarding the commercial industry and spawning events.

2018 First Nation Herring Communications Coordinator Report

This in turn kept the South Coast Nations, Northern Nations, and Sun Shine Coast Nations' informed of commercial catch hailed in, catch allocation numbers being caught, over flights summaries of spawning herring and Test vessel information allowed the First Nations' to plan their herring fisheries accordingly and avoid conflict with the commercial fishermen.

In 2018 First Nations' communities who participated in gathering whole herring and roe in 2018 accomplished harvesting approximately 6,700 lbs for whole herring and 500 +/- lbs of herring roe for their communities.

Conclusion:

South Coast First Nations were very appreciative of information shared by DFO during the 2018 herring season. Information received by the Southern, Northern, and Sun Shine Coast First Nation was used to plan and organize opportunities to access herring and roe from their traditional territory. Herring received from the Denman Isle was very appreciated by Tla'amin and Komoks First Nations. The relationship building with DFO is important to all First Nations' communities. The First Nations' Herring Communications Coordinator initiative in 2018 was well received by First Nations' and the collaboration between DFO and F.N.H.C.C achieved a good working relationship level which has seen positive understanding of each other's desires and needs from a First Nations' perspective and management perspective. The 2019 herring season and collaboration between First Nations' and DFO on the many concerns is welcome because it is believed this is the start of a positive relationship building tool.

2018 First Nation Herring Communications Coordinator Report



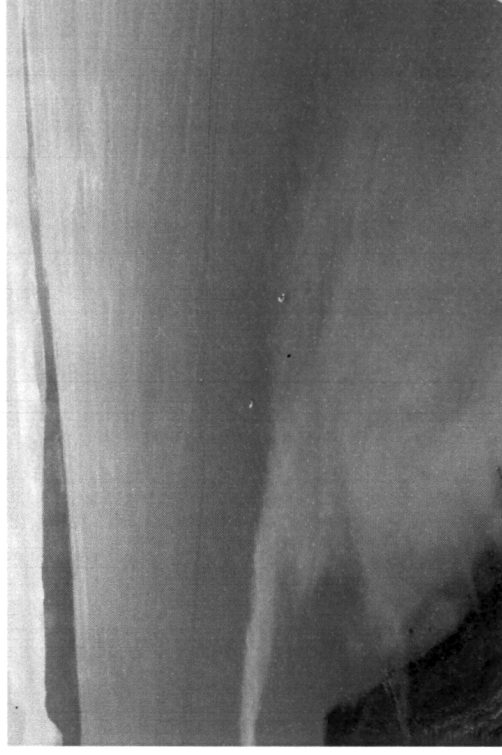
Strait of Georgia First Nation Pre- Season Herring Meeting

February 22, 2018



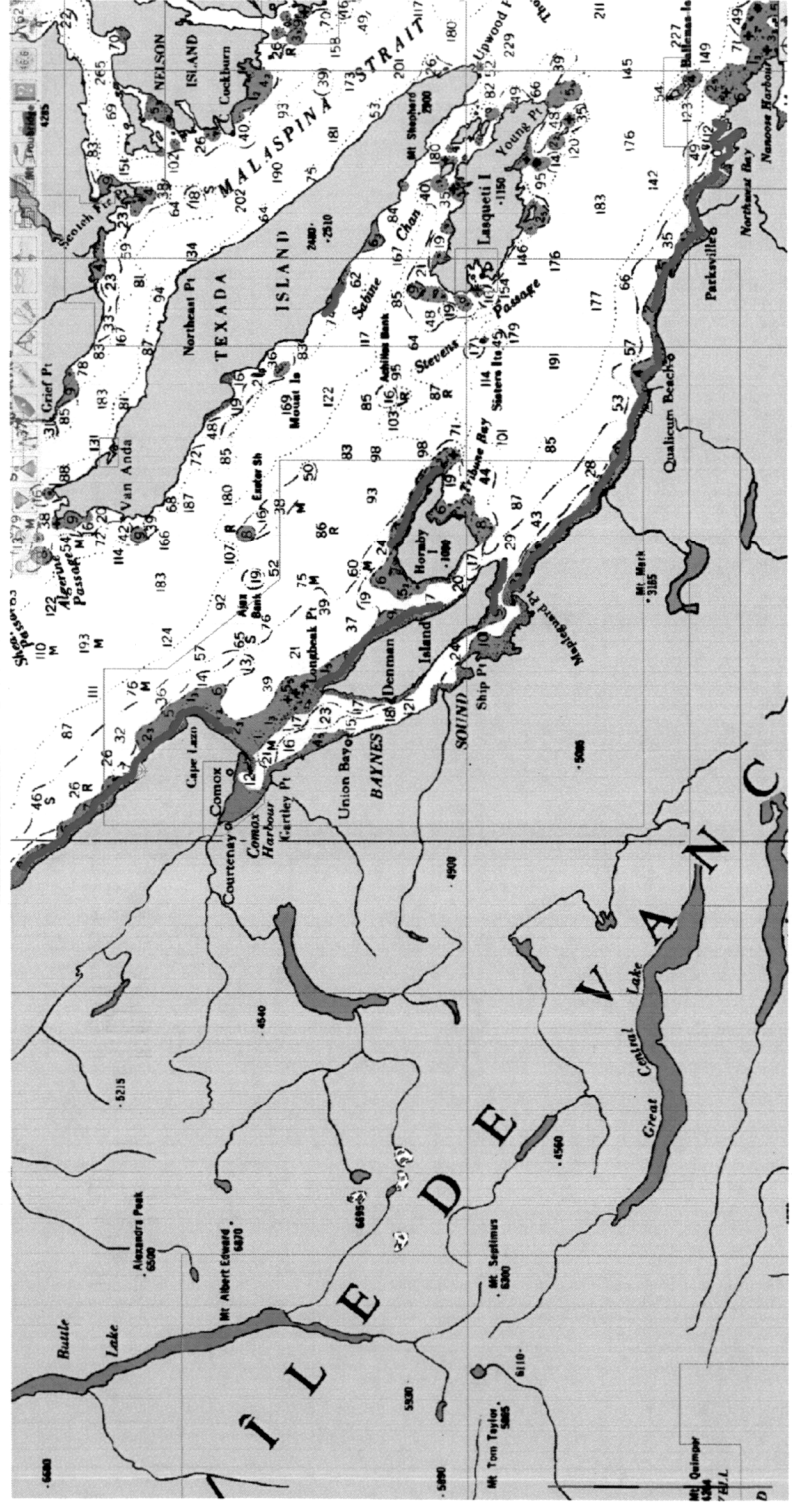
Strait of Georgia 2017 – Spawn

- Area 13
 - No spawn observed
- Areas 14
 - 51.2 NM observed - Flight
 - Mar 4-12, 15-18, Mar 25-Apr 3
- Area 15
 - No spawn observed
- Area 16
 - 1.9 NM observed - Report
- Area 17
 - 4 NM observed - Flight
 - March 29

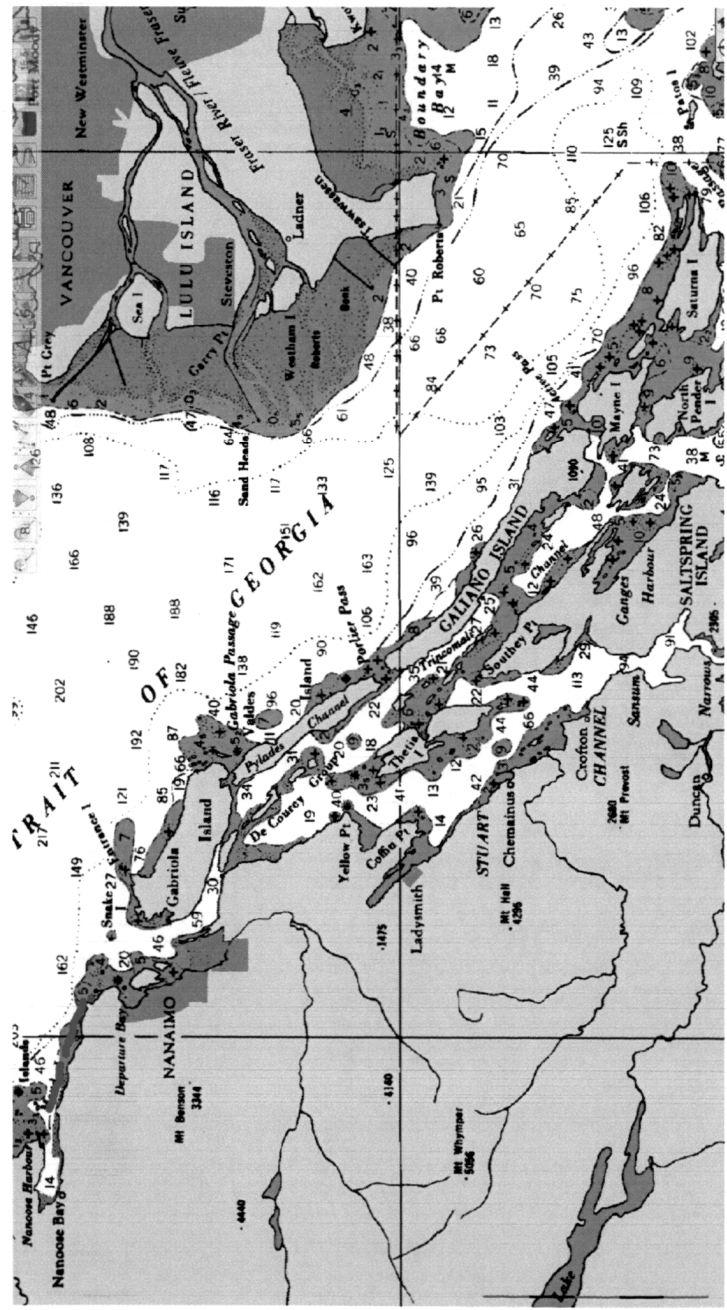


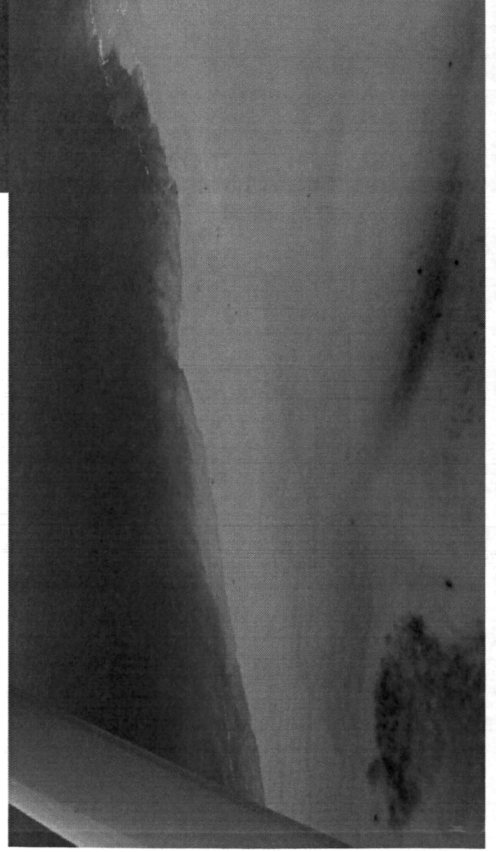
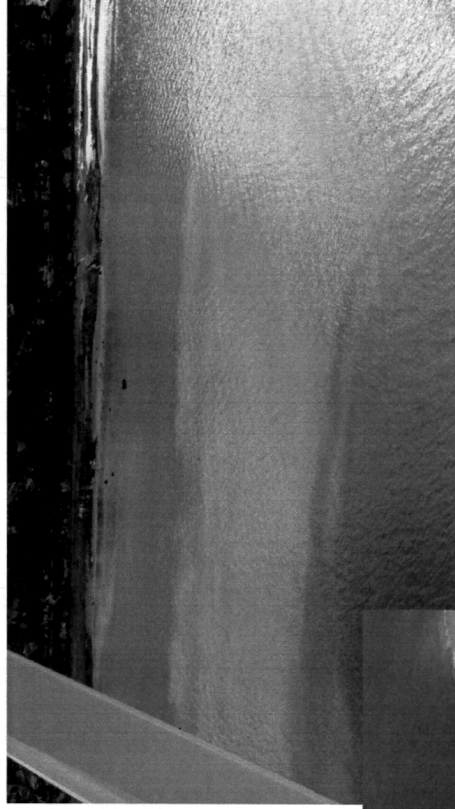
Columbia Beach to Nile Creek Mar 5 2017

Area 14-16



Area 17





Time-Series Maps of Herring Spawn and Catch

<http://www.pac.dfo-mpo.gc.ca/science/species-especes/pelagic-pelagique/herring-hareng/herspaw/paw/default2-eng.html>

South Coast Herring Spawners 1930-2015

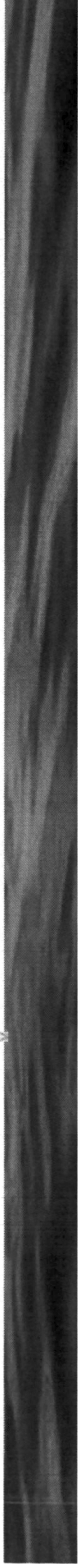
http://www.pac.dfo-mpo.gc.ca/science/species-especes/pelagic-pelagique/herring-hareng/herspaw/BCS_spa-eng.html

Section 173s: S Yellow Point: 1930-2000

<http://www.pac.dfo-mpo.gc.ca/science/species-especes/pelagic-pelagique/herring-hareng/herspaw/GIF/0173s.gif>

Section 173n: N Yellow Point 1930- 2001

<http://www.pac.dfo-mpo.gc.ca/science/species-especes/pelagic-pelagique/herring-hareng/herspaw/GIF/0173n.gif>



Statistical Tables of Spawn and Catch Records

<http://www.pac.dfo-mpo.gc.ca/science/species-especes/pelagic-pelagique/herring-hareng/herspawnpages/default3-eng.html>



Management Measures

- Commercial fishery management approach considers the risk tolerance for avoiding LRP in each area given several factors: status of stock biomass, stock growth rates, and the recent history of fishery.
- **SOG:** Stock biomass is high and growth rates are positive. The area has supported commercial fisheries for the past 30 years. A 20% harvest rate will be applied in this area. (IFMP page 49)

Harvest Levels

- Application of 20% harvest rate will result in overall potential harvest of up to 28,881 short tons and a corresponding potential roe harvest up to 21,944 short tons

Roe Quota

- Seine catch target 9,813 short tons
- SN: 874 transferred to F&B, 80t transferred for charity F&B fishery
- Gillnet catch target 11,177 short tons
- Total Roe quota 20,990t

Food and Bait 2017/18

Season

- F&B opened November 7, 2017 with initial quota of 4000t
- December 5, 2017 increased quota to 6000t
- F&B fishery closed February 12, 2018

Food and Bait 2017/18 Summary

- Total validated catch 6004t
- Total available 6874t quota
- 19 licences converted from Roe to Food and Bait @
46 tones/licence, for a total of 874 tons

Catch Cap Area's - Food and Bait

- Catch cap of 4000t was put in place in Subarea 29-5 for 2017/18 season
- Catch cap of 1000t was put in place in 17s for 2017/18 season
- Total quota fished in 29-5 was 3982.9t - closed January 10, 2018
- No fishing occurred in 17s

Occurrence Reports

- 14 occurrence reports
 - 1 – dead sea lions
 - 1 – fishing in closed area
 - 12 – releases totalling 79t


Brown, Laura (Pacific)

From: Receptionist <receptionist@halalt.org>
Sent: 2018–October-11 1:36 PM
To: Spence, Brenda
Cc: Thomson, Andrew; Brown, Laura (Pacific); Postlethwaite, Victoria; Neuman, Amber;
Goruk, Andrea; Spencer, Kent; Conley, Kevin
Subject: Re: Commercial Herring Fishery Closure
Attachments: Halalt Herring Letter.pdf

**Good Afternoon Please Kindly Accept this Letter that's attached
To this email**

Thank You

s.19(1)

 Receptionist
HALALT FIRST NATION
7973 Chemainus Road
CHEMAINUS, BC
V0R 1K5
Telephone: (250) 246-4736
Fax: (250) 246-2330
Email: receptionist@halalt.org



**HALALT FIRST
NATION**

A Coast Salish First Nation

7873 Chemainus Road ~ Chemainus, BC V0R 1K5

Ph: 250-246-4736 Fax: 250-246-2330

Oct. 10, 18

Brenda Spence
A/Regional Manager, Pelagics
Fisheries and Oceans Canada / Pacific Region
Brenda.Spence@dfo-mpo.gc.ca

Dear Ms. Spence:

Re: Commercial Herring Fishery Closure

Halalt First Nation has requested herring fisheries closures for many years and have done so formally through written communication for the past two years. In 2016, it was requested that the Food and Bait and Special Use fisheries be closed in PFMA 17-1 to 17-9, portions of 17-16, 17-17, and PFMA 18 (all subareas), and in 2017, it was requested that all commercial herring fisheries be closed in this same area and extending the closure to PFMA 29-5.

In 2016/2017, DFO conceded to implement a 2,000 short ton Food and Bait fishery catch cap for the closure area and in 2017/2018, DFO implemented a 1,000 and 4,000 short ton Food and Bait fishery catch cap for 17S and 29-5, respectively, and closed the Roe fishery south of Dodd Narrows. Despite these harvest restrictions, Halalt has not observed any herring spawning activity in the closure area for the past two years. There has also been a marked absence of herring predators such as marine birds, mammals, and salmon during this time period and herring FSC harvest in the area has not been possible.

It is felt that the current level of harvest restrictions has not been adequate despite the much lower Food and Bait harvests in 17S of 91 short tons in 2016/2017 and no fishing effort in 2017/2018. Further, the catch cap of 4,000 short tons in area 29-5 is perceived to be largely ineffective given the Food and Bait harvest in 29-5 for the past three seasons has been at or slightly above this level (3903 short tons in 2015/2016; 4298 short tons in 2016/2017; 3983 short tons in 2017/2018).

For 2018, Halalt is again calling for a complete closure to all commercial herring fisheries in PFMA 17-1 to 17-9, portions of 17-16, 17-17, PFMA 18 (all subareas), and PFMA 29-5 for the purposes of stock rebuilding and ecosystem rehabilitation.

We demand that this management measure be implemented prior to the opening of the November 2018 Food and Bait fishery. It is required that this closure remain in place for a minimum of 5 years, one herring generation, to allow for stock rebuilding and create the opportunity for additional data collection and analyses to be done around ecosystems interactions so that any economic fisheries permitted to occur in this area in future can be managed in a respectful, informed, and accountable manner. We look forward to continuing to work with DFO Science on the collection and exchange of data specific to herring and ecosystems interactions in the closure area.

s.19(1)

We will anticipate that this management measure will be implemented accordingly and reflected in the draft Food and Bait, Special Use, and Consolidated Pacific Herring Integrated Fisheries Management Plans for 2018/2019.

Sincerely,



Chief James Thomas, Halalt First Nation

Cc: Andrew Thompson, Andrew.Thompson@dfo-mpo.gc.ca
Laura Brown, Laura.Brown@dfo-mpo.gc.ca
Victoria Postlethwaite, Victoria.Postlethwaite@dfo-mpo.gc.ca
Amber Neuman, Amber.Neuman@dfo-mpo.gc.ca
Andrea Goruk, Andrea.Goruk@dfo-mpo.gc.ca
Kent Spencer, Kent.Spencer@dfo-mpo.gc.ca
Kevin Conley, Kevin.Conley@dfo-mpo.gc.ca

s.19(1)

Brown, Laura (Pacific)

From: Kimberly Lagimodiere [REDACTED]
Sent: 2018–October-15 11:56 AM
To: Reid, Rebecca
Cc: Neuman, Amber; Goruk, Andrea; Thomson, Andrew; Spencer, Kent; Conley, Kevin;
Brown, Laura (Pacific); victoria.poslethwaite@dfo-mpo.gc.ca;
jordan.maher@qullhanumutsun.ca
Subject: Re: Commercial Herring Fishery Closure
Attachments: 201810151113.pdf

To Rebecca Reid,

Please find attached a letter from the Chief of Cowichan Tribes, William Seymour, regarding a requested herring Food and Bait and Special use fisheries closure.

Respectfully,

Kim Lagimodiere

B.Sc. Biologist

Lulumexun ~ Cowichan Tribes Lands, Fisheries and Governance

Please note, [REDACTED]

Please consider the environment before printing this message.

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Cowichan Tribes

5760 Allenby Road Duncan, BC V9L 5J1
Telephone (250) 748-3196 Fax: (250) 748-1233

October 15, 2018

Via Email: rebecca.reid@dfo-mpo.gc.ca

Rebecca Reid,
Regional Director General
Department of Fisheries and Oceans

Dear Ms. Reid,

Re: Commercial Herring Fishery Closure

Cowichan Tribes has requested herring fisheries closures for many years and have done so formally through written communication for the past two years. In 2016, it was requested that the Food and Bait and Special Use fisheries be closed in PFMA 17-1 to 17-9, portions of 17-16, 17-17, and PFMA 18 (all subareas), and in 2017, it was requested that all commercial herring fisheries be closed in this same area and extending the closure to PFMA 29-5.

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It is felt that the current level of harvest restrictions has not been adequate despite the much lower Food and Bait harvests in 17S of 91 short tons in 2016/2017 and no fishing effort in 2017/2018. Further, the catch cap of 4,000 short tons in area 29-5 is perceived to be largely ineffective given the Food and Bait harvest in 29-5 for the past three seasons has been at or slightly above this level (3903 short tons in 2015/2016; 4298 short tons in 2016/2017; 3983 short tons in 2017/2018).

For 2018, Cowichan tribes is again calling for a complete closure to all commercial herring fisheries in PFMA 17-1 to 17-9, portions of 17-16, 17-17, PFMA 18 (all subareas), and PFMA 29-5 for the purposes of stock rebuilding and ecosystem rehabilitation.

We demand that this management measure be implemented prior to the opening of the November 2018 Food and Bait fishery. It is required that this closure remain in place for a minimum of 5 years, one herring generation, to allow for stock rebuilding and create the opportunity for additional data collection and analyses to be done around ecosystems interactions so that any economic fisheries permitted to occur in this area in future can be managed in a respectful, informed, and accountable manner. We look forward to continuing to work with DFO Science on the collection and exchange of data specific to herring and ecosystems interactions in the closure area.

We will anticipate that this management measure will be implemented accordingly and reflected in the draft Food and Bait, Special Use, and Consolidated Pacific Herring Integrated Fisheries Management Plans for 2018/2019.

s.19(1)

Sincerely,



Chief William Seymour
Cowichan Tribes

Cc: Andrew Thompson, Andrew.Thomson@dfo-mpo.gc.ca
Laura Brown, Laura.Brown@dfo-mpo.gc.ca
Victoria Postlethwaite, Victoria.Postlethwaite@dfo-mpo.gc.ca
Amber Neuman, Amber.Neuman@dfo-mpo.gc.ca
Andrea Goruk, Andrea.Goruk@dfo-mpo.gc.ca
Kent Spencer, Kent.Spencer@dfo-mpo.gc.ca
Kevin Conley, Kevin.Conley@dfo-mpo.gc.ca
Jordan Maher, jordan.maher@qullhanumutsun.ca

Brown, Laura (Pacific)

From: Jordan Maher <jordan.maher@qullhanumutsun.ca>
Sent: 2019-January-09 3:13 PM
To: Postlethwaite, Victoria
Cc: Spence, Brenda; Brown, Laura (Pacific); Rusch, Bryan; Neuman, Amber; Palfrey, Terrence; Spencer, Kent; 'Chad Ormond'
Subject: QARS Review of 2018_19 Draft Herring IFMP
Attachments: QARS Review 2018_19 Draft Pacific Herring IFMP.pdf

Hello Victoria,

Please find attached the QARS review of the 2018_2019 Draft Pacific Herring IFMP. We look forward to your response.

s.19(1)



Jordan Maher

Executive Director
Q'ul-Ihanumutsun Aquatic Resources Society
Office: 250-246-4736 Cell: [REDACTED]



Q'UL-LHANUMUTSUN AQUATIC RESOURCES SOCIETY

7973 Chemainus Rd. Chemainus BC, V0R1K5
Phone: (250) 246-4736 Fax: (250) 246-2330

January 9, 2019

Victoria Postlethwaite
Fisheries and Oceans Canada
200-401 Burrard Street
Vancouver BC
V6C 3S4
Email: victoria.postlethwaite@dfo-mpo.gc.ca

RE: Review of Draft Pacific Herring Integrated Fisheries Management Plan, November 7, 2018 to November 6, 2019

Dear Ms. Postlethwaite,

Pacific herring have been and continue to be a very important traditional food source for the Hul'q'umi'num people and are a vital component of healthy ecosystems within and outside of Hul'q'umi'num traditional territory. The QARS Member communities of Cowichan Tribes, Stz'uminus First Nation, Lyackson First Nation, Halalt First Nation, Lake Cowichan First Nation, and Penelakut Tribe have a vested interest in ensuring that Pacific herring fisheries are carried out in a sustainable manner that will allow food and ecosystem needs to be met to ensure that this animal is available for future generations and that the ecosystem is brought back to a healthy and balanced state.

Please find our comments below on the Pacific Herring Integrated Fisheries Management Plan, November 7, 2018 to November 6, 2019.

1) Area 17S Management Measures

With regards to the management measures south of Dodd Narrows that DFO has proposed for the 2018/19 Roe Herring season and has implemented for the 2018/19 Food and Bait Herring and Special Use Herring seasons:

Roe Herring, page 91 of the Draft 2018/19 Pacific Herring IFMP:

"While the aggregate Strait of Georgia stock remains healthy and productive, spawn information and local observations indicate recent low levels of spawn in PFMA's 15 and 17S, beginning with a marked decrease in spawn in the mid-1990's. Migratory patterns for herring shift and it is unclear what impact fisheries may have on the distribution of spawn in these areas. For the 2017 season, DFO implemented in-season spawn criteria that are required prior to consideration of a commercial Roe herring fishery in these areas. There was no significant spawn in these areas in the 2017 season, and for the 2018 season, a further measure of not opening to commercial Roe fisheries was put in place. No spawn was observed in these areas in 2018, therefore for the 2019 season these areas will remain closed.

This measure is intended to ensure that commercial fisheries are not opened in small areas of fish or spawn, commercial fisheries are staged on major bodies of fish, and opportunities for Indigenous FSC fisheries can be provided on a priority basis."

Food and Bait Herring, page 146 of the Draft 2018/19 Pacific Herring IFMP:

"In 2016/2017, DFO implemented a catch cap of 2,000 short tons in the area south of Dodd Narrows (PFMA 17-1 to 17-19, portions of 17-16, 17-17, and PFMA 18 (all Subareas) described as the waters westerly of the Gulf Islands south of Dodd Narrows near Nanaimo. In 2017/2018 DFO reduced the catch cap to 1,000 short tons in the area south of Dodd Narrows and also implemented a catch cap of 4,000 short tons in the adjacent PFMA, Subarea 29-5. These measures were implemented in order to address concerns and observations regarding recent levels of herring spawn and potential impacts on First Nations Food, Social and Ceremonial opportunities, as well as ecosystem considerations. During the 2017/2018 herring Food & Bait fishery, there was no harvest within the catch cap area south of Dodd Narrows, a total of 3,983 short tons were harvested in the catch cap area Subarea 29-5. For the 2018/2019 season Subareas 17-1 to 17-9, portions of 17-16, 17-17, and PFMA 18 (all subareas) will not be opened, and the 4,000 ton catch cap will remain in place for Subarea 29-5."

Special Use Herring, page of the Draft 2018/19 Pacific Herring IFMP:

"The following areas are identified as fishing areas, subject to in season decisions on specific areas that will be opened by Variation Order following the process as described by gear type and area, and subject to the permanent area closures detailed in Section 3.5:

Strait of Georgia: Areas 13-1 through 13-11, 14, 15, 16, 17, 18, 19, 20"

The QARS is supportive of the closures described above for the 2018/19 Roe Herring and Food and Bait Herring fisheries in PFMA 17S and notes the progress being made between QARS and DFO on herring related issues. It is also noted that a large Food and Bait Herring catch cap (4,000 tons) still exists for PFMA 29-5 and that the Special Use Herring fishery is still operating in PFMA 17 and 18. These fisheries are not supported and it is perceived that they are causing harm to both local herring populations and the local ecosystem.

The QARS supports the views expressed by the QARS Member nations that a complete closure to all commercial herring fisheries in PFMA 17-1 to 17-9, portions of 17-16, 17-17, PFMA 18 (all subareas), and PFMA 29-5 is required for the purposes of stock rebuilding, ecosystem rehabilitation, and traditional food access, and that this closure be put in place for a minimum of 5 years, or one herring generation. This closure notice has been communicated to DFO in letters signed by the chiefs of the six QARS Member nations dated September 20, 2016 and in letters from individual QARS Member nations in September 2017 and 2018 and at in-person (October 20, 2016, September 2017, and October 24, 2018) and teleconference (November 1, 2016) meetings.

Specific dialogue regarding the Special Use Herring fishery has not yet begun between QARS and DFO. Please provide QARS with the catch and location data of the Special Use Herring fishery in PFMA's 17 and 18 from the entire time series available or direct us to where we can obtain this information.

2) Risk Assessments

The ecosystem risks assessed using the Risk Assessment Tool (RAT) for all herring fisheries appears to have only covered a narrow set of risks. For example, it covered SARA-listed species encounters, but did not assess the impact of herring removals on SARA-listed or other vulnerable species, it also covered contact with bottom habitat, but it did not assess the impact of herring removals on the ecosystem itself. Bottom habitat is one feature of an ecosystem, but it is the relationship between all biotic and abiotic features that comprise an ecosystem.

Other ecosystem considerations that should be included in the risk assessment are:

- Assessment of how herring removals impact local ecosystem health.
- Assessment of how herring removals impact the abundance, distribution, and behaviour of other species
 - SARA listed Southern Resident Killer Whales (SRKW). Herring are a main prey item for chinook salmon, which is in turn the main prey item for SRKWs, hence herring removals have an indirect yet significant impact on SRKWs.
 - Chinook salmon. One of the main prey items of Southern BC chinook salmon is herring and the majority of Southern BC chinook salmon populations are experiencing extreme declines, including Chemainus River chinook.
 - Marine ducks. Species of marine ducks follow herring and herring spawn and rely on herring as a prey item. Removals of herring may change the dynamics of marine duck movements and impact population abundance.
- Assessment of how herring removals impact smaller resident stocks.
- Assessment of how noise pollution from fisheries impacts herring, other fishes, and marine birds. There have been studies on Atlantic herring that have shown that human-caused noise can cause changes in Atlantic herring behaviour. The current risk assessment only looked at noise disturbance in relation to marine mammals.
- Assessment of fuel/oil leakage. This is an issue as fuel/oil leakage accumulates over many fisheries over many years.

#	Section	Page	Draft IFMP Text	Comment/Recommendation
1	1.3.2	20	Recreational harvest may occur coast wide, however fishing effort and catch is very minimal.	Given that the BC Tidal Waters Sport Fishing License does not provide any specific detail regarding the number recreational fishers targeting herring, it is suggested that: <ol style="list-style-type: none"> 1) A specific stamp (similar to a salmon stamp) be required for

#	Section	Page	Draft IFMP Text	Comment/Recommendation
				<p>the recreational harvest of herring.</p> <p>2) All recreational harvest of herring must be reported as a condition of license with the stipulation that new licenses/stamps will not be issued until harvest has been reported.</p> <p>These measures would be advantageous because they would :</p> <ul style="list-style-type: none"> • Provide DFO with the number of recreational fishers targeting herring • Provide catch and effort data • Provide the locations that recreational harvesting occurs • Potentially provide conservation dollars from herring stamp fees that could be used for clam management • Provide an indication of the impact of recreational fishing on herring populations and local ecosystems
2	1.5.2	21	<p>Whole herring may be fished for recreational purposes with no closed times. The daily maximum limit for herring is 20 kg, with a two day possession limit of 40 kg. Recreational harvesting may occur by means of dip net, herring jig, herring rake, or cast net.</p>	<p>As stated in the 2018/18 QARS review of the Pacific herring IFMP, it is recommended that recreational harvest be closed in areas that are experiencing major declines or absence of herring spawn.</p> <p>The daily limit for herring may be minimal when considering herring as one stock, however, this limit may be a significant portion of the population on a local scale. For example, herring spawn south of Dodd Narrows has been minimal to nonexistent and any harvest on small spawn events will have an impact on the rebuilding of local herring populations.</p> <p>In addition, harvesters running boats over spawning sites during or prior to a herring spawn event will affect the</p>

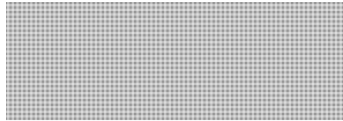
#	Section	Page	Draft IFMP Text	Comment/Recommendation
				behaviour of spawning herring and may even prevent herring from spawning at the intended site.
3	2.5	26	An ongoing survey has examined the fall distribution and relative abundance of juvenile herring in the Strait of Georgia since 1991. Among other things, this survey examines the distribution, abundance, food and feeding of juvenile herring and salmonids to address the role of forage fish in an ecosystem.	As stated in the 2018/18 QARS review of the Pacific herring IFMP, QARS is available to partner with any research taking place in Hul'q'umi'num territory and requests to be kept informed of when and where these juvenile surveys occur. Have these juvenile studies been published and are they available?
4	4.5	40	For 2019, a funding strategy has been identified to support stock assessment activities at similar levels to recent years.	Please include a broad overview of the stock assessment activities that will be funded for 2019, how these activities have changed over recent years, and what these changes mean to stock assessment.
5	7	63	SOG: Food and Bait, Special Use, and Roe herring opportunities, to a maximum of 28,395 tons, subject to consultations. Spawning biomass in 2019 is forecast to be 135,497 tons and below the LRP with a 0% probability in the absence of fishing. Stock biomass is high and growth is positive.	Please qualify this statement by specifying which areas of the SOG are currently experiencing high spawning biomasses and that the forecast is based on spawn from these areas. Much of the SOG is not experiencing abundant herring populations and this should be made clear in the IFMP. The general statement that 'stock biomass is high and growth is positive' applied to the entire SOG, misleads by implying that herring populations throughout the SOG are doing well, which is not true. It should be made clear to the public that areas in the SOG are experiencing massive declines.

We request to receive a timely response to these recommendations. Please ensure that we are kept informed as to the revisions made to the draft IFMP based on the information provided, and that you distribute any drafts for review and comment to us as they become available.

Sincerely,

The Q'ul-Ihanumutsun Aquatic Resources Society Board of Directors.

s.19(1)



Jordan Maher
Executive Director,
Q'ul-Ihanumutsun Aquatic Resources Society

Cc: Brenda Spence, Brenda.Spence@dfo-mpo.gc.ca
Laura Brown, Laura.L.Brown@dfo-mpo.gc.ca
Bryan Rusch, Bryan.Rusch@dfo-mpo.gc.ca
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Terrence Palfrey, Terrence.Palfrey@dfo-mpo.gc.ca
Kent Spencer, Kent.Spencer@dfo-mpo.gc.ca

Brown, Laura (Pacific)

From: Neuman, Amber
Sent: 2019-January-10 3:03 PM
To: Postlethwaite, Victoria; Brown, Laura (Pacific); Kelly, Gerry; Spence, Brenda; Cleary, Jaclyn; Rusch, Bryan
Subject: RE: 2018/2019 Herring Draft IFMP - IMAWG Recommendations to DFO
Attachments: 2018 Herring IFMP IMAWG Recommendations to DFO.PDF; 2018 IMAWG Herring Recommendations to DFO.PDF

Hi all,
DFO received 2 letters on the same day from IMAWG regarding Herring. The first, addressed to Victoria, provides feedback on the draft herring IFMP. The second, addressed to Laura, are the IMAWG recommendations for SOG herring in follow-up to the Tier I/Tier II meetings and follow-up action planning meeting.

While there is considerable overlap in content between these letters, I think they require separate but coordinated responses. I spoke briefly with Victoria today and RHQ will be drafting responses to the IFMP letters with a delivery date to First Nations in conjunction with the approval of the IFMP (target date Feb 1). SCA RM staff (myself and Bryan) can provide support in the development of the IFMP response letter.

I think the second letter, addressed to Laura, should have a SCA response from Laura. If no one has any objections, I can take the lead on drafting this response and then share with SCA staff, science and RHQ for review. I can coordinate with Victoria to develop this response to make sure we are consistent in our messaging. The target delivery for this second letter would be mid-February.

Please let me know what you think about this approach.

Cheers,
Amber Neuman
Resource Manager – Herring
South Coast Area, Resource Management Branch, Pacific Region
Fisheries and Oceans Canada | Government of Canada
Amber.Neuman@dfo-mpo.gc.ca | Tel: (250) 756-7246| Cell: (250) 618-1022

Gestionnaire des Pêches - Hareng
Secteur de la Côte Sud, Gestion des ressources, Région Pacifique
Pêches et Océans Canada | Gouvernement du Canada
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From: Sonora Thompson [mailto:smorin.imawg@gmail.com]
Sent: 2018-December-21 12:02 PM
To: Postlethwaite, Victoria
Cc: Brown, Laura (Pacific); Kelly, Gerry; Spence, Brenda; Neuman, Amber; Cleary, Jaclyn; 'Nick Chowdhury'; 'Nicole Frederickson'; 'Sonora Thompson'
Subject: RE: 2018/2019 Herring Draft IFMP - IMAWG Recommendations to DFO

Forgot attachment, sorry.



Sonora F. Thompson
Executive Director, Island Marine Aquatic Working Group
7973 Chemainus Road, Chemainus BC, V0R 1K5
Mobile: 250-202-0037
www.imawg.ca

From: Sonora Thompson [mailto:smorin.imawg@gmail.com]
Sent: December-21-18 11:59 AM
To: 'Postlethwaite, Victoria'
Cc: 'Brown, Laura (Pacific)'; 'Kelly, Gerry'; 'Spence, Brenda'; 'Neuman, Amber'; 'Cleary, Jaclyn'; 'Nick Chowdhury'; 'Nicole Frederickson'; 'Sonora Thompson'
Subject: 2018/2019 Herring Draft IFMP - IMAWG Recommendations to DFO

Hello Victoria,

Please find attached the 2018/2019 Herring Draft IFMP IMAWG Recommendations to DFO.

Thanks kindly,



Sonora F. Thompson
Executive Director, Island Marine Aquatic Working Group
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Mobile: 250-202-0037
www.imawg.ca



Island Marine Aquatic Working Group
7973 Chemainus Road
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December 18, 2018

Victoria Postlethwaite
Pelagics Management Unit
Fisheries and Oceans Canada
200-401 Burrard Street
Vancouver, BC, V6C 3S4
via: Victoria.postlethwaite@dfo-mpo.gc.ca

RE: 2018/2019 DRAFT PACIFIC HERRING INTEGRATED FISHERIES MANAGEMENT PLAN (IFMP)

Dear Ms. Postlethwaite;

The Island Marine Aquatic Working Group (IMAWG) has reviewed the 2018/2019 DRAFT Pacific Herring Integrated Fisheries Management Plan effective **November 7, 2019**. This letter is a combination of a summary of the advice and recommendations from the 2018 IMAWG Herring technical, Tier One and Two meetings with scientific support of the IMAWG biologist.

IMAWG and the participants would like to remind Fisheries and Oceans Canada (DFO) that First Nations have priority access, after conservation, as per Section 35.1 of the Constitution Act, with the obligation of the Department to engage in direct bilateral consultation with First Nation governments. Under no circumstance is IMAWG to replace direct fiduciary bilateral DFO to band consultations.

Through-out the last few years, IMAWG and Island Nations have been working with DFO to ensure that the management of herring is supported through the best possible science and collaboration with Indigenous communities around Vancouver Island. This year's IFMP and Tier two meetings have reflected that hard work. From the inclusion of the *Value and importance of Herring to Indigenous People* piece, to the workshops and bilateral meetings held with East Coast Vancouver Island Nations to establish Management Objectives for Area 14 and 17, and the management measures implemented in these areas in an effort to address concerns and observations regarding recent levels of spawn and potential impacts to Section 35.1 fisheries. While, there is still a lot of work to be done and likely tough conversations to be had, the effort made by the DFO Pacific herring team has not gone unnoticed by IMAWG. The efforts made have helped to increase transparency, collaboration and relationship building that we hope will continue to expand and improve in the future, not only in herring, but in the other species as well.

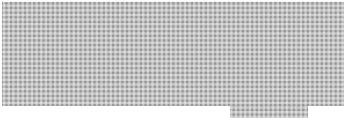
We continue to support the work that the Department and Island Nations are doing through the Management Strategy Evaluation (MSE) Process to establish Management

Objectives for the Strait of Georgia, and to explore alternative processes, actions, etc.
for herring south of Dodds Narrows.

Please provide a written response directly to smorin.imawg@gmail.com, within 30 days
of the date on this letter.

Sincerely,

s.19(1)



Nick Chowdhury, IMAWG President

Cc: Laura Brown, Area Director South Coast, DFO
Gerry Kelly, Aboriginal Affairs Advisor, South Coast, DFO
Brenda Spence, A/Regional Pelagics Coordinator, DFO
Amber Neuman, Fisheries Resource Manager – Roe and Food and Bait Herring
Jaclyn Cleary, Head, Herring Dynamics Program
Vancouver Island Indigenous Government

Item	Page/Section Reference	Heading	IFMP Text	Question/Concern/Feedback
1	20/1.3.1	Indigenous People of British Columbia	"During the fishing season, requirements to avoid specific locations to support FSC harvest may be implemented. Indigenous people are encouraged to contact the respective Area Resource Managers to provide information on placement of boughs or locations of other FSC harvests so that the commercial fleets can be directed to avoid these areas."	<ul style="list-style-type: none"> Does the Department have any details (e.g. coordinates, general location, or maps) of these areas for the 2018/2019 season that they could include in the IFMP if Nations agree.
2	21 / 1.5.1	Fishery Characteristics, Indigenous People of British Columbia		<ul style="list-style-type: none"> Suggest referencing Section 3.2 for more details.
3	23/1.7.1	Consultation, Indigenous People of British Columbia	"The Department consults with Indigenous nations on the annual Pacific Herring IFMP and the management of Pacific Herring more broadly to ensure that the duty to consult is fulfilled and that the proposed plans are informed by the best available information, including traditional knowledge and understanding of fisheries practices.	<ul style="list-style-type: none"> Suggested wording: in an effort to ensure that the duty to consult is fulfilled.

Item	Page/Section Reference	Heading	IFMP Text	Question/Concern/Feedback
4	25 / 2.4.	Ecosystem Interactions	In addition, work is underway to coordinate the various research initiatives to help better inform management and Science decisions.	<ul style="list-style-type: none"> It would be useful to provide a few more details/context around this statement. What kind of work is underway? How will this work be communicated within and outside of DFO? When can we expect to see some details of this work (e.g. will this be in place to inform management in 2019/2020)?
5	63 / 3.1	Management Measures for the Duration of the Plan	<p>“SOG: Food and Bait, Special Use, and Roe herring opportunities, to a maximum of 28,395 tons, subject to consultations. Spawning biomass in 2019 is forecast to be 135,497 tons and below the LRP with a 0% probability in the absence of fishing. Stock biomass is high and growth is positive.”</p>	<ul style="list-style-type: none"> While Island Nations recognize that the spawning biomass in the Strait of Georgia is at an all-time high, IMAWG would like to continue to reiterate that the current stock assessment and modelling approach is not able to take into account variations in the stock (or stocklets) throughout the Strait of Georgia. For this reason, IMAWG will continue to urge DFO and east coast of Vancouver Island Nations to continue work on the MSE process, specifically with the goal of setting objectives for the area. Through the establishment of these objectives and simulation testing, alternative approaches may be identified to help explore ideas on how to rebuild stocks south of Dodds Narrows.

Item	Page/Section Reference	Heading	IFMP Text	Question/Concern/Feedback
6	48/4.8.5	Strategic Framework for Fishery Monitoring and Catch Reporting in Pacific Fisheries	“In the case of the herring fishery, the risk assessment tool has been used to date to assess monitoring levels required for the Roe (seine and gillnet), Food and Bait, and Spawn-on-Kelp commercial fisheries. The risk assessments were drafted by the Department and reviewed with commercial harvesters in 2018. A summary and key findings from the draft risk assessments for these fisheries are highlighted in Appendix 13. Comments on the findings from all resource users are now welcome and the full risk assessments are available on request.”	<ul style="list-style-type: none"> IMAWG would like to recognize the process that was used to undertake these risk assessments for herring. This is how the process (for all species) was explained to Island Nations at our data management workshop in March 2018, but herring has been the first example of actually accurately undertaking the process the way it was understood by IMAWG. That is, the risk assessment is drafted by the Department and then reviewed with the harvest group for comment and feedback PRIOR to being released in the Draft IFMP for comment by all resource users.
7	65 / 9.1	Performance Evaluation Criteria – National	“Provide harvest opportunities in a manner consistent with the Sparrow Decision (SCC 1990) and other relevant court decisions and treaty obligations.”	<ul style="list-style-type: none"> Change word “provide” to “ensure”. The Department doesn’t provide opportunities for First Nations; they ensure that First Nations have access after conservation and before industry.

Item	Page/Section Reference	Heading	IFMP Text	Question/Concern/Feedback
8	66 / 9.3.3	Ecosystem Processes	"Coordinate with Science to understand on-going research, information gaps, and plan future work."	<ul style="list-style-type: none"> As per our recommendation from the Herring Action Planning Meeting, held with IMAWG staff and DFO south coast herring staff, we have suggested that Science staff provide briefing notes on relevant research and priorities to DFO Herring Managers and stock assessment staff.
APPENDICES				
9	87/ App 6	Recreational Fishing Plan- Supporting Sustainable Fisheries-Catch Reporting and the (iREC) Survey	"Recreational harvesters are required as a condition of the Tidal Waters Sport Fishing Licence to report information on their recreational fishing activity and catch to DFO representatives when requested to do so, whether in person or via an internet survey. Recreational harvesters may be requested by a Fishery Officer or designated DFO representative at the dock, or through a creel or internet survey to provide catch/effort information on their recreational fishing activities."	<ul style="list-style-type: none"> Under the "conditions of licence" on a tidal waters sport fishing licence, the "provision of information" condition, in which a "licence holder shall provide accurate information regarding their catch and fishing activities upon request" is at the very bottom of the tidal waters licence, rather than up top with the other conditions of licence. This condition should be place at the top of the list of licence conditions. In addition, more effort/education should be put into educating recreational anglers about reporting catch and taking part in the iREC survey. Consider making it a requirement that anglers have to

Item	Page/Section Reference	Heading	IFMP Text	Question/Concern/Feedback
				review a quick slideshow or iREC awareness online course before they are granted their annual fishing licence.
10	91/App 7	Management Measures for the Duration of the Plan-Changes from Previous Seasons	“Areas 15 and 17 South of Nanaimo will not open to Roe herring commercial fisheries in the 2019 season. This is due to lack of observed spawn in these areas over the past several years, and concerns expressed by Indigenous nations with respect to the inability to access herring for FSC in these areas adjacent to their communities.”	<ul style="list-style-type: none"> IMAWG recognizes the efforts being made by the Department to address concerns raised by Strait of Georgia Nations. We express support for continued work and collaboration between DFO and Strait of Georgia Nations.



Island Marine Aquatic Working Group
7973 Chemainus Road
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December 18, 2018

Dr. Laura Brown
Area Director, South Coast Pacific Region
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laura.l.brown@dfo-mpo.gc.ca

RE: 2018 ISLAND MARINE AQUATIC WORKING GROUP AND FISHERIES AND OCEANS CANADA TIER ONE AND TWO HERRING 2018 TIER ENGAGEMENT RECOMMENDATIONS

Dear Dr. Brown,

Please find included in this letter a summary of the advice and recommendations that resulted from the 2018 Island Marine Aquatic Working Group (IMAWG) Herring Tier One and Two meetings held on October 28 and 29, between Island Nations and Fisheries and Oceans Canada (DFO) South Coast Resource Managers. The IMAWG Executive Director, President and Biologist also met with DFO Invertebrate Manager and the Aboriginal Affairs Advisor on November 19 for a follow-up Action Planning Meeting to further determine next steps, roles, responsibilities, and timelines. This letter is meant to provide a cumulative and collective summary of advice and feedback that considers Island Nations, IMAWG Members, and DFO contributions and perspectives.

IMAWG and the participants would like to remind DFO that First Nations have priority access, after conservation, as per Section 35.1 of the *Constitution Act*, with the obligation of the Department to engage in direct bilateral consultation with First Nation governments. Under no circumstance is IMAWG to replace direct fiduciary bilateral DFO to band consultations.

IMPROVING OBSERVATIONS IN SPAWN TIMINGS

Improving observations in spawning events and timing is a key aspect of managing the resource. Accurate reports of herring spawn help to inform science, stock assessment and management, however reductions to the herring spawn observation program have occurred in recent years. Spawn observations help identify patterns or changes in spawn timing or location over time. Local observations from Indigenous communities around Vancouver Island have indicated that there have been shifts in spawn timing over time, with spawning occurring later and later compared to historic reports. Similar observations have been reported by DFO science/stock assessment.

At this time, it is difficult to know if this change in spawn timing shown by DFO data is a result of changes in spawn survey methods or as a result of actual changes in spawn timing.

Shifts in spawn timing may indicate the following, which could have larger impacts on the ecosystem as a whole:

- that there are some overall behavior changes in herring, and/or
- that earlier spawning sub-populations are being removed from the larger aggregate.

As local community members are frequently out on the water in locations and times that the DFO team is not able to be, it would be beneficial for community members to provide reports to their fishery departments and DFO of any spawn that is observed. This would also improve collaboration and communication between the Department and Indigenous communities. Improved observations may also play a significant role in helping to confirm/deny the theory of shifts in spawn timing spatially and/or temporally.

Recommendations:

- IMAWG to create a Facebook "Herring Spawn Observation" page to help local communities upload observations/reports on spawn location and timings. This work to involve working with the local Indigenous Herring Coordinator, and IMAWG member, Warren Johnny.
 - It would also be beneficial to record other ecosystem conditions and observations of presence of predators (seabirds, pinnipeds, whales, etc.) or other marine ecosystem indicators with spawn observations.
- IMAWG to communicate out to Vancouver Island Nations the importance of reporting spawning activity and provide reporting options and contact information to Matt Thompson from DFO.
- IMAWG to utilize the brochure provided by DFO on why DFO is looking for spawning information and why it's valuable to the Vancouver Island Nations.
- DFO (Amber Neumann) encourages local Vancouver Island community members to participate in spawn overflights, as these provide great opportunities to provide local knowledge and information as well as assisting in relationship building on a local level.
- IMAWG to follow up with QARS biologist to see if their TrailMark database could help for incorporating spawn observations and if they would be willing to share an example of the database.
- Nations to map traditional harvest locations within territories to analyze changes/patterns over time.

HERRING GENETIC DATA COLLECTION

Currently, Eleni Petrou (PhD Student) at the University of Washington (UofW) is working on a Pacific herring research project in an effort to address concerns of risks to localized herring stocks as a result of fishing effort being focused in small areas. This work is of particular interest to IMAWG and Island Nations because Traditional Ecological Knowledge indicates that historically there were discrete, resident herring stocks that were present year-round around Vancouver Island. Genetic work associated with this research has indicated that genetic differentiation increases with difference in spawn timing (i.e., late spawning populations are isolated from March and April populations), populations with similar spawn timing are connected by migration, and that Inlet populations (Bute, Knight, and River's Inlet) are isolated from the larger primary aggregate stock.

Some local Indigenous communities have communicated to DFO that they are concerned that local genetically distinct populations are being over harvested in the larger aggregate managed fisheries. Observations have indicated that spawn in some areas around Vancouver Island is decreasing or in some locations completely gone. While we understand that the drivers behind herring spawn dynamics in modern science are historically not well understood, and DFO's historical research indicates that there aren't any localized isolated populations, but an overarching migratory stock that is utilized for the commercial fishery. This has been an ongoing debate between Vancouver Island Nations and DFO. Recommendations from IMAT suggested that more work should be done to collect DNA information for Pacific Herring, specifically in regards to Herring encountered in the Food and Bait Fishery in Area 29-5 and other areas in PFMA 17 south.

As discussed at the Herring Action Planning meeting held on November 19, 2018 follow-up discussions between the IMAT biologist and Eleni Petrou indicated that there was uncertainty with doing a population genetics study on the East Coast of Vancouver Island, having the statistical power to answer the question of what specific Vancouver Island stocks are encountered in these fisheries. The type of analysis required to determine this would require a significant amount of genetic differentiation between the "baseline" herring populations. Based on simulations conducted by Eleni, individual herring could only be assigned to their stock of origin when the stock was defined quite coarsely (e.g., Alaska herring vs. BC herring).

Given that the genetic differentiation between spring-spawning BC stocks is so subtle, we currently only have the statistical power to assign individual fish to a specific primary spawning BC population. Based on these discussions, it is unknown at this time if there is any value to DFO and local First Nations in pursuing the idea of collecting DNA samples from Herring encountered along the east coast of Vancouver Island. This is combined by the fact that DNA analysis is fairly costly. Further discussions are required to determine if/how there may be value in pursuing this work in the future. Alternatively, to address the concern or impacts on local stocks, continued work to develop Management Objectives for this area should be prioritized to be incorporated into the Management Strategy Evaluation (MSE) Process.

Recommendations:

- DFO and Island Nations to have clear conversations, informed by expertise/research by Eleni Petrou about the limitations of DNA collection and analysis and how this work can be used to achieve objectives outlined by Island Nations.
- IMAWG to follow up with Eleni Petrou (UofW) to determine if there is any data that could be collected now in hopes that any future work or studies can identify stock specifics. DFO currently doesn't have funding (\$100.00 per fish), but can collect samples from the food and bait fishery to be analyzed later.
- Focus on more research to explore what environmental conditions drive spawn timing and location dynamics.
- DFO Science to provide briefing notes highlighting relevant Herring Research/Science priorities to DFO Herring Managers. DFO Managers to do the same for Science staff. This would allow for open communication and understanding and act as a way to bridge science with stock assessment and fisheries management; there is potential valuable research that may help gain a better understanding of environmental conditions and what contributes to species population dynamics that could have implications to management.
- IMAWG to provide to DFO contact details for Eleni Petrou (UofW). Eleni has offered to provide a presentation on the research to anyone interested.
- IMAWG to provide Eleni Petrou's contact information and project details (sampling methods, equipment, analysis assistance, and cost estimates) to Vancouver Island Indigenous communities.
- DFO to incorporate Eleni's research, once published, into literature review to inform future management.
- DFO to start a monthly standardized sampling program to get an idea of herring presence year-round.
- DFO to explore light trap methods (Evelyn Brown, Lumni Nation) for potential forage fish sampling program. IMAWG to provide presentation and method materials.
- DFO (Jaclyn Cleary) to review Salish Sea Marine Survival Project (SSMSP) research initiatives to identify any projects that may be related to Pacific Herring in an effort to inform management and begin to address environmental components which may impact herring population and spawn dynamics.

AGGREGATE MANAGEMENT

As we have discussed previously, the current management approach fails to recognize existence of smaller sub-populations. Further to that, there is a concern that by consistently focusing the commercial fishing pressure on fish at the beginning of the spawn timing, these fish may be completely removed from the population, or alter life history patterns (e.g. fish return later to spawn due to selection pressure). One recommendation to address this concern is to spread out harvest spatially and temporally for all commercial herring fisheries. This is an objective that could be incorporated into the MSE process. We do acknowledge the Departments recent efforts to try to address local concerns by

Island Nations and incorporate some finer spatial scale actions into the Management Approach for 2018/2019 season (e.g. Food and Bait closure south of Dodd Narrows).

Please provide a written response directly to smorin.imawg@gmail.com, within 30 days of the date on this letter.

Sincerely,

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Nick Chowdhury, IMAWG President

Cc: Brenda Spence, A/Regional Pelagics Coordinator, Pacific Region, DFO
Victoria Postlethwaite, Regional Herring Officer, DFO
Amber Neuman, Fisheries Resource Manager – Roe and Food and Bait Herring
Jaclyn Cleary, Head, Herring Dynamics Program



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Our file Notre référence

EKME# 4087032

*Charlie Cootes
President, Maa-Nulth Treaty Society
3075 3rd Avenue
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Charlie.Cootes@uchucklesaht.ca

Dear Chief Cootes,

This letter provides an update on key planning considerations for Fraser River Chinook and Sockeye fisheries that is intended to guide further development of First Nations food, social and ceremonial (FSC) fishing plans this summer. Significant conservation concerns for Fraser Chinook, Fraser Sockeye and impacts from the Big Bar rock slide will need to be carefully considered on an ongoing basis in the development of further First Nations FSC fishing plans including:

1. Fishing plan scenarios to achieve management objectives for Fraser River Spring 4₂, Spring 5₂ and Summer 5₂ Chinook;
2. Impacts of the Big Bar rock slide on migrating salmon; and.
3. Status of in-season Fraser River Sockeye returns and management approach to address stocks of concern and weak returns.

Further information on these important issues is provided below and Department of Fisheries and Oceans (DFO) staff will continue following up with you to discuss fishing plans in consideration of these concerns, as we go through the remainder of the season.

Big Bar Slide:

In response to a discovery of a significant landslide on June 23, 2019 in a narrow portion of the Fraser River near Big Bar, just North of Lillooet, B.C., a unified command incident management team has been established. Further information on the slide including updates on recent progress can be found at the following site:

<https://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery/emergency-response-and-recovery/incident-summaries/big-bar-landslide-incident?keyword=big&keyword=bar>

Many of you have been involved in the response effort and I would like to recognize the significant contributions made by many First Nations throughout the Fraser River and approach waters, which has included supporting and providing leadership on this issue, on the ground work, communicating updates to your communities, and developing management responses.

One of the key areas of work underway is to develop a better understanding of the potential impacts of the slide on Chinook and Sockeye that must migrate past the slide. Information from satellite tagging and hydroacoustics to date indicates that fish passage past the slide is extremely low. This is a particular concern given the runs that are anticipated to be returning to areas upstream of the slide:

Fraser Salmon Conservation Units Migrating past Big Bar Ferry				
Conservation Unit	Species	Management Unit	COSEWIC	% of Expected Fraser Salmon Species Escapement ^A
Upper Fraser Spring, Middle Fraser Spring	Chinook	Spring S ₂	Endangered	6%
Middle Fraser Summer	Chinook	Summer S ₂	Threatened	6%
Middle Fraser	Coho	Interior Fraser Coho	Threatened	12% ^B
Early Stuart	Sockeye	ES ₁	ENDANGERED	0.84%
Bowron	Sockeye	ES	ENDANGERED	0.28%
Nadina-Francoise	Sockeye	ES	NOT AT RISK	2.71%
Late Stuart	Sockeye	S	ENDANGERED	0.84%
Francois/Fraser (Stelako)	Sockeye	S	NOT AT RISK	7.65%
Chilko	Sockeye	S	NOT AT RISK	57.37%
Quesnel	Sockeye	S	ENDANGERED	6.90%
Fraser Pink	Pink	Fraser Pink	NA	30.00%
Chilcotin Steelhead	Steelhead	IFR Steelhead	ENDANGERED	33.00%

^AFraser Sockeye percentages are for the forecast return all others are of the average escapement

This is a dynamic and quickly changing situation, and DFO, along with First Nations and the Province of BC, is seeking solutions to fish passage issues as our highest priority. While work is underway to re-establish and monitor passage at the site we expect that the slide will place additional stress on at-risk Chinook, Sockeye and other salmon populations that migrate to spawning areas upstream of the rock slide. As a result, we will continue to monitor the situation and consider any other actions that may be required to support the migration of Chinook and Sockeye through to these areas.

Fraser Chinook

On April 16, 2019, the Government of Canada announced new fisheries management measures to conserve Fraser River Chinook (see news release: <https://www.canada.ca/en/fisheries-oceans/news/2019/04/government-of-canada-takes-action-to-address-fraser-river-chinook-decline.html>). This announcement set out highly precautionary fishery restrictions intended to provide a high degree of protection to at risk Fraser Spring 4₂, Spring S₂ and Summer S₂ Chinook returning in 2019. The management target is to reduce overall Canadian fishery mortalities on these populations to near 5%. As well, the start of the Northern (Area F) Troll fishery was delayed to reduce its harvest of Fraser Summer 4₁ Chinook, in order to pass more of these fish to the Fraser River to support First Nations FSC fisheries.

On July 12th, 2019, in response to the Big Bar Slide, the Department announced additional recreational fishery management measures including a maximum size limit for retained Chinook in a number of Southern BC recreational fisheries beginning July 15th, 2019 to further protect larger at-risk Fraser Chinook that are migrating upstream of the

landslide. These maximum size limits were in effect until July 31st, 2019 when the majority of these at risk Fraser Chinook had migrated through marine approach areas. In conjunction with the measures announced in April, these measures were intended to provide a high degree of protection to at risk Fraser Spring 4₂, Spring 5₂ and Summer 5₂ Chinook migrating through these areas.

Discussions remain on-going with Fraser watershed and approach area First Nations with respect to Chinook FSC fishing plans to provide some harvest opportunities while limiting Canadian fishery mortalities to near 5% on these stocks of concern. This will require a continued need to account for all impacts on Fraser Spring 4₂, Spring 5₂ and Summer 5₂ Chinook throughout the duration of their migration to their spawning areas. It has therefore remained important to consider trade-offs between Chinook-directed communal fisheries that will encounter higher proportions of Summer 5₂ Chinook and delaying communal fishery opportunities to target Summer 4₁ Chinook. Pre-season planning discussions also considered the implications of anticipated Sockeye fisheries with respect to Chinook stocks of concern, however, at this time, it appears that Sockeye may limit Chinook fishing opportunities due to extremely low returns to date. DFO Area Resource Managers will follow-up with specific discussions on fishing plans consistent with conservation objectives for all stocks. The Department will also continue to consider ceremonial access requests.

Fraser Sockeye

The majority of Sockeye returning in 2019 are expected to be recruits from adult spawners in 2015 with some from 2014 and 2016. Fraser River Sockeye salmon returns for 2019 to date have been well below the median forecast. Forecasts have become less certain in recent years due to variability in annual survival rates as a result changing environmental conditions.

The pre-season 50% probability level forecast (i.e. p50, equal chance of a higher or lower return) was estimated to be 4.795 million fish for all Sockeye management groups. This is similar to the cycle average of 4.789 million. The largest contributing stocks for the 2019 return were expected to be the Chilko, Stellako, and Quesnel, with Summer run Sockeye predicted to represent 82% of the total forecast Fraser Sockeye return and the Chilko stock representing 57% of the total forecast Sockeye return at p50.

To date, all Fraser Sockeye run timing groups are tracking low (well below the p50). The p25 run size was adopted by the Fraser River Panel for the Early Stuart, and the Early Summer, Summer, and Late Run timing groups are currently tracking below the p10 forecast level. In-season information will continue to be monitored. Sockeye returns in many other areas of the coast to date also appear to be tracking below pre-season expectations.

Lower than expected Pacific Salmon Commission (PSC) gill net test fishing catches delayed the start of purse seine test vessels. The start date for the Area 13 purse seine test fishery was also significantly delayed and the Area 4b/5/6c gill net test fishery in US waters has not been deployed to date.

Due to the very low abundance of Fraser Sockeye, the start-up of Sockeye-directed FSC fisheries will be delayed until the identification of Sockeye Total Allowable Catch (TAC) (note that commercial and recreational fisheries remain closed to Sockeye retention). As well, decisions regarding any future harvest opportunities will need to take into consideration implications of the Big Bar rock slide. DFO will be managing to a level below the low abundance exploitation rate (LAER) for all Sockeye management units as a result of the very low abundances observed to date. The LAER is not a target and all fisheries impacts, including Sockeye bycatch in fisheries directed on other species and test fisheries catches, must be accounted for under the LAER.

DFO continues to work with Canadian Fraser River Panel (FRP) to monitor Fraser Sockeye and Pink salmon returns and assess potential implications of environmental conditions on Fraser River Sockeye migration. Updates are provided via Fisheries Notice following each meeting as well as on the PSC website. If impacts arising from the slide require additional fisheries management actions, DFO staff will share potential management approaches and discuss potential fishing plan options with First Nations through in-season planning processes.

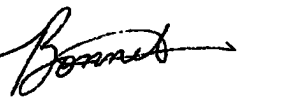
In closing, this fishing season is providing many challenges and considerable uncertainty. DFO acknowledges the challenges this poses for FSC harvesting opportunities. After conservation, First Nation FSC fisheries are the highest priority and DFO staff will continue to work with the communities in the marine and in-river areas with respect to FSC opportunities that are consistent with conservation objectives.

If you would like to meet to discuss this information or discuss fishing plans in your area please contact your local Area manager. Thank you for your continued cooperation.

Sincerely,



Jennifer Nener
Regional Director, Salmon
and Business Client Services
Pacific Region



Terri Bonnet
Area Director, Fraser and
Interior
Pacific Region



Laura Brown
Area Director, South Coast
Pacific Region

Cc: Larry Johnson, MFC Chair, JFTC Co-chair, JFC Alternate Chair
Connie Waddell, Huu-ay-aht Executive Councillor
Frank Dragon, Ka:'yu:'k't'h'/Che:k'tles7et'h Councillor
David Johnsen, Toquaht Manager for Resources and Public
Alan McCarthy, Yuułu?i?at? Member of Legislature with Lands